Are e-portfolios an asset to learning and placement?

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March 2008

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Executive Summary

What we did

We asked the question *"what is the added value for the student learning experience, of electronic portfolios (e-portfolios) as an innovative means of portfolio assessment?"*

We answered the question using an holistic approach aimed at giving a panoramic perspective on the role of e-portfolios in placement from the point of view of users as well as academics and policy makers. Within the constraints of time and resources, we believe we have made a worthwhile contribution to our primary objective of supporting placement unit users' capacity to make informed choices about implementation of e-portfolios.

A literature review of both published and "grey" material informed us of the issues and therefore questions to ask. These were put into a survey that was sent to forums that placement academics and administrative staff would be likely to access, such as ASET and PlaceNet mailing lists. Additional views were obtained in interviews with key staff in institutions that were engaged in e-portfolio development and/or innovative assessment in placement. We reviewed commonly used packages used to deliver personal development planning (PDP)[1] in institutions. We gave access to one of the more common e-portfolio packages to a group of students and allowed them to develop their own e-portfolios, and conducted a focus group to explore their views on the utility of an e-portfolio product to them.

Why we did it

Our methodological approach was chosen to enable us to get a placement users' perspective on the added value of e-portfolios because we found that the subject area was sparse. It is dominated by recommendations from the policy environment and technical reviews and not focused on placement needs. We did not feel this provided sufficient support for placement units yet to make a decision on implementation of e-portfolios.

The review of the academic literature was to establish the extent of knowledge of e-portfolio use in assessment in general and in particular in placement. The review of e-portfolio/PDP products gave us insight into the capabilities of these systems. Staff who work in placements are a mixture of academic and administrative staff, and we wanted the views of each, hence the survey and

[1] "*PDP is defined as a structured and supported process undertaken by an individual to reflect on their own learning, performance and/or achievement and to plan for their personal, educational and career development*" www.heacademy.ac.uk/ourwork/learning/pdp

interviews. Since it is students who will be using the e-portfolios we wanted to know if they could use them, and if they thought there was added value in using them, hence the workshop with an e-portfolio product and the focus group.

What we found

E-portfolios are in wide use in UK Higher Education (HE) institutions, but there is little information on their use in placement. Placement units do not seem to be using e-portfolio packages, though there is widespread interest in packages that might support PDP/e-portfolios in placement. Units are considering either e-portfolio products or employing Virtual Learning Environments (VLEs) to support PDP in placement.

In interviews with sites where an e-portfolio approach has been taken centrally by the institution there is great enthusiasm for the e-portfolio. In each case the use of the e-portfolio has been optional but a large proportion of the university in terms of faculties/schools and students have “bought in” to the e-portfolio. However students who had recently completed a placement, while finding the e-portfolio easy to use, were dubious about its utility in portfolio development in placement.

Our key arguments

In the debate on e-portfolios we feel there has been a focus on the delivery of portfolios more than the content, the medium rather than the message. But the academic literature suggests there are live issues about the role of portfolios in learning and assessment. We advise those placement units who have not recently reviewed what they do, to take a step back and assess the utility of portfolios and e-portfolios in placement learning and assessment. There is a need to consider the purpose(s) of a portfolio and the audience(s) at which it is aiming and its precise role in learning and assessment. In particular, to what extent is the portfolio a dossier of achievement relative to a method of learning? Does development of a portfolio encourage reflective thinking? Does a portfolio help the student to learn how to learn? Does the portfolio accurately record achievements? Are these dimensions where present subject to appropriate types of assessment and other forms of feedback?

Our conclusions and recommendations

There is no pressing pedagogical necessity to introduce an e-portfolio approach for placement and in many disciplines there is no external driver for it and few resources.

But a strong process of change is underway in universities, driven by government policy on PDP and e-learning. However HE is not at the stage of having common aims, common standards or common tools and placement students' needs have been quite marginal in decision making about implementing these tools.

Placement units, small and dispersed in their institutions, are not normally in a position to be innovators or even early adopters. In Chapter 6 we provide a checklist of things to think about when considering migrating to electronic support for portfolio building and portfolio assessment.

If an e-portfolio is to be implemented (and in large part this is centrally driven by government) then a placement unit should look to implementing a system for placement only if it is being supported centrally by their institution. There needs to be training to support the additional learning needed by staff, students and employers. But if a package is used anyway more generally, for example for PDP, there are some advantages to using such a system for placement students, for example to generate web based portfolios; and there may be also opportunities to include a richer range of artefacts, learning tools, reflection templates and possibly easier access to them. E-portfolios provide also the capacity to provide different views of the same data for different audiences and purposes.

Alternatively, it is practical to implement electronic placement portfolios using existing VLE systems or common tools[2]. Placement students can be enrolled as a Blackboard module. Using a 'Community' (Blackboard) or similar approach in other VLEs, pre-placement students who are not attached to any module may be supported in (e.g.) searching for placements. This has the advantage that placement units need use fewer software packages to deliver their services, an advantage shared with few e-portfolio packages. These latter do not expressly contain means to serve pre-placement students as well as placement students and few of them have placement management systems. Whichever system is used to support placement students one needs to consider the content and methods of assessment.

Finally, we found significant gaps in the academic and practitioner literature required for a comprehensive answer our research question (*what is the added value for the student learning experience, of e-portfolios as an innovative means of portfolio assessment?*). We note the need for more and more robust research on the following topics:

1. What is the added value to students and universities of placement?
2. What is the explanation of the source of the added value for academic achievement and for employability?

[2] Common tools are packages such as Word, Excel, PowerPoint, Access (and other Microsoft Office applications) and packages such as SPSS, or desk top publishing etc that the student may be expected to use in their studies.

3. What is the role and efficacy of (paper) p-portfolios and (electronic) e-portfolios in assessing experiential learning and achievement?
4. What is the impact on portfolio aims, purposes, content and assessment methods, of specific discipline requirements, both externally imposed and internally driven?
5. Is there a generalisable e-portfolio advantage over p-portfolios or other electronic environments across placement disciplines and is there a market leading product that is fit for purpose?
6. Which p-portfolio, e-portfolio and other electronic means are fully compliant with the Disability Discrimination Act and are user-friendly for all users (including students, placement staff and tutors and employers).

Chapter 1: The context and methodology for the study

The ASET research brief

This study examines the role of e-portfolios in the assessment of work based learning undertaken by undergraduate students on work placement.

ASET (the work based and placement learning association) invited bids to undertake a brief research project on evaluating the role of e-portfolios as an innovative assessment method. The focus was to be on e-portfolios in relation to the student learning experience for students on work placements.

The authors, based in two schools of De Montfort University (Business & Law and Nursing & Midwifery), successfully tendered for the project. Our interest was and is practical. Both schools offer work placements and two of the three authors are respectively academic head (Duffy) and placement manager (Vickers) of the Business School Work Based Learning Unit. The third author (Anthony) is a research professor in the School of Nursing & Midwifery. Both schools were addressing assessment methods and IT support for the placement experience, but in very different practical contexts. The team believed that a 'fresh eye' from placement practitioners would be useful to placement providers in other institutions.

The research question

Based on the successful bid, the research question was:-
What is the added value for the student learning experience, of e-portfolios as an innovative means of portfolio assessment?

To answer this question there were three research objectives:

1. What is the added value of e-portfolios for the student learning experience?
2. What is the extent of the use by placement units of innovative methods of assessment, with specific reference to e-portfolios?
3. In what ways do these factors differ for different disciplines, with a particular but not exclusive focus on a comparison of business and nursing placements?

The research methodology

A mixed methodology was employed in order to address what placement units do currently regarding:- portfolio content, assessment, student support and use of e-

portfolios; some of the range of e-portfolio products in use in Higher Education (HE); what existing studies show about their use; how usable they are in placement and what may be their added value for the student learning experience on placement.

Both secondary and primary research methods were used, albeit small scale given the research brief.

Secondary research consisted of:

1. *A review of policy and academic literature on e-portfolios and assessment:* The review was undertaken 1) to help identify question areas for a survey of the activities of placement units and 2) to help identify barriers and bridges to use by placement units of e-portfolio packages. *Chapter 3 presents the review of the literature. Appendix 1 presents the search strategy for the e-portfolio and assessment literature and Appendix 2 presents a summary of the results of this search.*

2. *A review of some electronic systems and packages that can support portfolio development.* The aim of this review was to identify how the packages addressed the issues raised by the literature review and survey of placement units (see below). *The review can be found in Appendix 5.*

Primary research consisted of:

1. *A survey of placement units and associated centres, drawn from the ASET and PlaceNet constituencies and databases*. The aim of the survey was to identify the common content of portfolios, the aims and nature of assessment and whether units were using e-portfolio packages. All members of the ASET mailing list and the PlaceNet mailing list were sent a questionnaire by email; the questionnaire was available also on a website for downloading. The questionnaire contained closed and open questions. Descriptive statistical analysis was conducted of closed questions from the survey. Qualitative (content analysis) was conducted of responses to open questions from the survey. *A summary of the survey results and a commentary on them can be found in Chapter 4. Tables of results can be found in Appendix 3.*

2. *Individual visits/ contact interviews with personnel in three universities: two universities where e-portfolios were in place for PDP and one university choosing a VLE to support placement.* The three interviews were conducted with university staff closely involved with placements and/or e-portfolio development in those sites. Given the review of the literature and the review of packages, the aim of the interviews was to understand why and how university personnel chose to introduce a particular package and their evaluation of it. *The results of these case studies can be found in Chapter 5.*

3. *A focus group of six business students from one university who had completed their placement year. They explored an example e-portfolio product and took part in a group discussion about its merits.* The students, who had completed paper portfolios during their twelve months' sandwich placement, were provided with an initial two-hour training session on a package, then they were given time to build their portfolio, or part of it. They returned a week later for a two-hour group discussion on their experience. The package chosen was one of the most popular e-portfolio products in use in UK universities. The e-portfolio package was developed for PDP more broadly rather than placement specifically but it has good functionality for placement portfolio building. The aim was not to evaluate the particular product per se but to get a new user's perspective on the specific added value for placement of an e-portfolio product compared to a p-portfolio process. The test by students followed the survey results from placement unit staff. Most units were not using an e-portfolio product and the survey results indicate placement unit staffs' perceptions of likely issues regarding ease of use, access to the technology, added value for learning or for assessment. *The results of the student focus group can be found in Chapter 5.*

4. *Two visits to university placement units with some innovative/ different methods of pre-placement training and portfolio assessment.* The aim of the pre-placement training visit was to provide an example of how preparation for placement is understood by a placement unit and for what reason they are using what they refer to as an e-portfolio, during pre-placement. The aim of the portfolio assessment example was to understand why the unit had introduced employer appraisal into the assessment. *The two examples are presented as Appendix 4.*

Ethical approval

- Approval for the survey was gained from De Montfort University Ethics Committee in May 2007.
- Notes of interviews and focus group discussion are available from the authors, but because anonymity is difficult to guarantee, permission must be sought from the interviewees for their identification.

Chapter 2: The policy context for e-portfolios

Summary: the role of policy in promoting e-portfolios

It seems that the UK government believes that e-portfolios are desirable at all education levels from school to university. Agencies set up by government to support education in schools, colleges, universities and the workplace all have strategies that include e-portfolios, which are seen as supportive of maintaining a lifelong portfolio of learning and achievement from school, through higher education and through to the workplace. Assessment employing portfolios is currently conducted and this may be using e-portfolios. As a highly topical area, assessment using portfolios (paper or electronic) was of particular interest in this project.

The following chapters indicate some of the technical, but more frequently practical and perceptual barriers to addressing all the requirements of the QAA Code and implementing e-portfolios to support the government agenda on life-long learning. It will be clear that there needs to be a well understood and well resourced institutional framework that can deal with much of the 'heavy lifting' on these matters so that placement units and work based learning students can focus on their core activity.

The next Chapter discusses the contribution of work placements to employability and to learning and addresses the nature of portfolios in relation to student learning and in assessment.

Introduction

This chapter identifies some of the UK drivers for implementation of e-learning and specifically e-portfolios in HE, as a means to bridge the gap between theory and practice, assess competency and support employability and lifelong learning.

It should be noted however, that although government promotes the value of work experience in developing transferable skills for employability, the e-learning impetus by government and in HE is focused on promoting student facility with information and communications technology (ICT) and supporting the implementation of PDP. It is not specifically focused on support for workplace or specifically placement learning or assessment.

The term e-portfolio itself is still a 'work in progress'. For example, Richardson (2005) engaged in research on e-portfolios for the Centre for Recording Achievement (CRA), an associate Centre of the Higher Education Academy

(HEA). She stated that the research uses the terms e-portfolio, PDP and Progress File interchangeably.

It should be noted also that the scope of the content of a portfolio varies, with some agencies and authors seeing them as records of achievement only (whether the achievements took place in HE or in the workplace). Thus reflective diaries and logs have been sometimes seen as something in addition to portfolios, whereas an increasing number of authors see reflective writing as the key to learning from the portfolio building process. Chapter 3 of this study will discuss the academic literature on the purpose, audience, content, learning and assessment issues concerning portfolios.

The Higher Education (HE) context for assessment, implementation of e-learning and e-portfolios

The Quality Assurance Agency for Higher Education (QAA) *Code of practice for the assurance of academic quality and standards in higher education* contains several sections relevant to assessment, work based and placement learning and e-learning, which are relevant for this study[3].

Assessment of students

Section 6 of the QAA Code identifies the role of assessment as:-

- Promoting student learning by providing the student with feedback, normally to help with performance.
- Evaluating student knowledge, understanding, abilities or skills.
- Providing a mark/grade that enables performance to be established.
- Enabling the public (including employers) and HE providers, to know that an individual has attained an appropriate level of achievement reflecting academic standards.

If a work based learning portfolio is to fulfil all of these functions of assessment then it will need to address the following: provision by students of evidence of competence and of achievements; assessment tools suitable for confirming achievements and evaluating competence; feedback to students appropriate to the different functions of formative and summative assessment (and potentially, diagnostic assessment also) and finally, dealing with potential conflict between promoting learning - including support for honest reflection - and judging competence and other achievements. As shown in the review of academic literature presented in Chapter 3, this is a very demanding set.

[3] For example: Section 6: Assessment of students – September 2006; Section 2: Collaborative provision and flexible and distributed learning (including e-learning) – September 2004; Section 9: Work based learning and placement learning – September 2007; HEFCE strategy for e-learning; DFES: Harnessing technology – transforming learning and children's services.

Portfolios must also address their differing purposes and audiences and the specific requirements of different disciplines – especially the demands of those where the portfolio forms part of the evidence for certification or license to practice. The content and approach to assessment will differ in different disciplines. The literature review in Chapter 3 and the survey results in Chapter 4 indicate that the object and aims of assessment are not the same for all work placements, but are to some extent discipline dependent. It was found also that survey respondents vary somewhat in their views of the importance for work based learning, of various categories of assessment.

The importance of dealing appropriately with these issues is evident in that the QAA Code goes on to state that the way in which students are assessed **fundamentally** affects student learning; that good assessment ensures students have **demonstrated** that they have met intended learning outcomes and that **diversity of assessment** practice is expected and welcomed (our emphasis).

Amongst the range of assessment methods identified by the QAA Code that are relevant to work based learning are peer activities and interactivity**, self reflective accounts and employer feedback**. However the code emphasises also the importance of effective assessment by **trained staff**, appropriate measurement of student achievement of learning outcomes and appropriate and timely feedback that promotes learning and facilitates improvement. Finally, the Code asks placement providers **to consider how e-portfolios can assist in the delivery of feedback** (our emphasis).

Other points relevant to this study refer to student access to clear information in a range of media including web-based materials and the need to pay attention to the security of assessment systems.

E-learning

The Higher Education Funding Council for England (HEFCE) strategy for e-learning (2005) sets out the strategy and implementation plan for supporting higher education institutions to develop and embed e-learning over the next ten years.

The Government e-learning strategy defines e-learning as any learning that uses information and communications technology (ICT). HEFCE wish to use ICT as a communication and delivery tool – to support students and improve the management of learning and of progression. Particularly relevant points for this study are the emphasis on the provision of personalised user experiences, supporting student progression, and supporting innovative use of ICT, as well as the aim to support students as life-long learners by enabling connections between academic learning and experiential learning in the workplace and other aspects of life.

Practical issues prior to implementation of e-learning are noted in Section 2 of the QAA Code. They concern availability, reliability and life expectancy of systems and packages and security and privacy. However, an important point for cost and ease of implementation of systems and packages is the relatively high requirements made of staff skills, reflecting the emphasis on staff training in Section 6 of the Code. The Code states also in Section 2 that staff must have the appropriate skills including both technical expertise and pedagogic expertise in design for delivery, learning support and assessment.

It should be noted that implementation time and costs of e-learning may be significant in order to address the quality markers in Section 9 of the QAA Code. This covers quality procedures regarding staff training, information and guidance, student entitlements, formative feedback, employer capacity and placement quality, monitoring and evaluation and overseas placements.

Referring again to Section 2 of the QAA code, there are a number of more focussed recommendations, on student learning and equality of access, including the following:-

- Students should have access to information to enable them to make appropriate preparations for a flexible and distributed learning (FDL) approach.
- Information needs to be available in a range of formats to avoid prevention of access due to cost, disability or lack of equipment.
- Delivery needs to take account of the lowest levels of technology available to students and students' special educational needs.
- Students whose experience is through directed teaching need to be aware of challenges and opportunities of autonomous learning.
- Students will need time to become familiar with new technologies; they will need support and an identified contact to ensure training is adequate and ongoing support is available.
- Students need to know the ground rules and protocols for communication with other students and tutors. This needs to be clear in e-systems where students may be sharing information via ‘gateways’.
- Students should have formal opportunities to feedback on the experience of their programme on a regular basis.
- Consideration needs to be given to feedback from external sources e.g. employers.

Some of these issues are followed up in the review of literature in the next Chapter, especially those concerned with access to information and autonomous learning. In the context of electronic support for portfolio building, issues more directly related to appropriate and supported choice of technology and student access to and familiarity with it are addressed in the Chapter 5 case studies.

The role of e-portfolios in learning and assessment

On 15 March 2005, the then Department for Education and Skills (DFES), published the e-Strategy 'Harnessing Technology: Transforming learning and children's services'. Ruth Kelly, then Secretary of State in that Department, said in her foreward to the document that technology needs to allow learners to further their learning – including work based learning - and to bridge boundaries between formal and informal learning. As Chapter 3 indicates, portfolios are commonly used as the assessment tool that can bridge this gap.

To date, there has been greater government emphasis on the role of portfolios in schools and further, rather than higher, education. For example, the DFES (2005) envisaged that an e-portfolio will make it *"simpler for learners to build their record of achievement throughout their lifelong learning"*. Further they planned *"A personalised learning space, with the potential to support e-portfolios available to every school by 2007-08*". However under *'What is needed'* the DFES stated that *"Schools, colleges and* ***universities*** *are working to provide learners with their own personal online learning space and will want to develop eventually an e-portfolio where learners can store their own work, record their achievements, and access personal course timetables, digital resources relevant to their own study, and links to other learners"* (Department for Education and Skills, 2005) (our emphasis).

Important for the conclusions and recommendations of this study of placement units is that the executive summary of the DFES (2005) document notes that currently there are too few economies of scale with respect to technology and innovation.

A CRA study survey of e-pdp and e-portfolio practice in UK HE found that 37 UK HE institutions (56% of respondents) had electronic resources they would describe as e-portfolios of which 22 said they had an e-portfolio tool or system to support PDP, in addition to other electronic resources they would not describe as e-portfolios. The most common electronic tool was Blackboard – a VLE, followed by PebblePad – an e-portfolio designed for PDP. Several institutions in the CRA study had Profile, specifically designed for placement, though it can be used more broadly for PDP (Strivens 2007: 5). It is not clear from this study how many institutions were using the products and using them widely, as the survey was based on purchases rather than usage.

The results of the survey of placement units presented in Chapter 4 of this study, indicate that respondents' usage of these products for their placement students is very limited indeed. Appendix 5 of this report reviews some products from the point of view of usability for placement units. Chapter 5 of this report presents case studies of staff decision making in choosing a product and also the results of a focus group of students who tested a product for placement portfolio building.

It is clear that a strong process of change is underway in universities, driven by government policy on PDP and e-learning. However HE is not at the stage of having common aims, common standards or common tools and placement students' needs have been quite marginal in decision making about implementing these tools.

Some organisations driving the e-portfolio agenda

The HEA (there is Academy support for each of the four nations in the UK) is the leading centre for promoting excellence in learning for the sector. They aim to support *"institutions, discipline groups and all staff to provide the best possible learning experience for their students*" (HEA mission statement, homepage www.heacademy.ac.uk). The academy provides support for research and dissemination in several fields relevant to this study, including e-learning and PDP. PDP is one of the key areas supported by the HEA and there is now a PDP-UK Network supported from the CRA. The CRA is *"a UK-wide networking organisation and centre of expertise in matters relating to recording students' achievements".* The CRA *"offers a range of services to higher education institutions and their communities aimed at supporting the implementation of Progress Files, Personal Development Planning and e-portfolios."*

The HEA supports Centres for Excellence in Teaching and Learning (CETLs) including the Centre for Excellence in Work Based Learning, based at Middlesex University and the Centre for Placement Learning in Health and Social Care (now renamed the Centre of Excellence in Professional Placement Learning), based at Plymouth University. Several papers in the literature review are drawn from the HEA publications.

Various organisations have been set up to address the ICT needs of the education sector. The British Educational Communications and Technology Agency (BECTA) is the Government's lead partner in the strategic development and delivery of the e-strategy in schools and the learning and skills sector.

As well, the three higher education councils of the UK agreed the formation of a Joint Information Systems Committee (JISC). The strategic vision of JISC has six aims, one of which is *"promoting the development, uptake and effective use of ICT to support learning and teaching"*. Among its activities JISC funds advisory services on products which include e-portfolios. As part of work for the JISC the CRA has been exploring e-portfolio products currently in use in the UK. In HE there are both discipline related (e.g. RAPID and ePET) and generic e-portfolio applications (e.g. PebblePAD and LUSID). Richardson (2005) refers to a review of twelve products undertaken for the CRA and there are additional products reviewed on the website of the Centre for Educational Technology Interoperability Standards (CETIS). Appendix 5 of this report reviews a range of products in terms of their usability generally for placement portfolio building but we were not able in this research to deal with functionality and user friendliness

for users with a range of disabilities. The results of the review can be found in Chapter 5 on choosing and using e-portfolios in work placement.

E-skills UK is a not-for profit, employer-led organisation, licensed by government as the Sector Skills Council for Information Technology (IT), Telecoms and Contact Centres. ITQ is the National Vocational Qualification for IT Users at Levels 1, 2 and 3. Assessment is by portfolio which may be an e-portfolio, and the British Computer Society has its own e-portfolio system for their ITQ Centres which is known as CASy (Candidate Administration System). The CASy portfolio is web-based and enables candidates to upload documentation of evidence for their assigned assessor.

Chapter 3: A review of literature on employability and on the role of portfolios in student learning and assessment

Summary: key points emerging from the review of the literature

Six points emerged that were important for the research enquiry and which have informed the design of the survey of placement units.

1. **Placements** give students an advantage in job seeking. Sandwich graduates have lower unemployment rates, higher starting salaries and more 'graduate' jobs compared to their fellow graduates. The question is why?
2. **Portfolios** are intended to support assessment of experiential learning as well as professional achievement. They can be an effective tool for linking theory and practice but the link is not often made effectively.
3. **Reflection**: Reflective practice is deemed to be an essential skill for placement learning and life long learning but there is little evidence on how it is achieved and some difficulties in how it is assessed and whether it is assessed. Capacity for reflective writing is assumed, but it has to be learned (and prior to placement?).
4. **Portfolio structure and content**: this is dependent on discipline – especially where there is a requirement for license to practice, the objectives and content may be externally set. Few institutions now have portfolios that can be described as 'shopping trolleys' but few also have achieved a 'cake mix' portfolio. Higher level learning requirements are more commonly found in postgraduate programmes.
5. **Assessment**: undergraduates get stressed about being assessed, but do not engage as much if they are not. Postgraduates are more positive about using portfolios, but assessment may cause conflict with deep learning. Assessment may be unreliable but better than random allocation of grades. Assessment should be qualitative and accept professional judgment. Formative assessment is preferred by some authors. Regarding who assesses and what is assessed – this may be related to whether there are degree credits awarded for portfolios.
6. **The added value of e-portfolios compared to p-portfolios** (paper portfolios). There are a number of potential benefits, but very little robust evidence.

Gaps in the literature

There are several areas of importance to this study where there appears to be little or nothing written:-

1. There is little written on placements in general in nursing and very little at all for business.
2. There is very little written on portfolios in business.

3. There are very few comparisons between p-portfolios and e-portfolios, and no study with rigour.

Introduction

Following comments on the role of work based learning in enhancing employability, this chapter reviews the literature related to the role of portfolios in student learning and assessment especially as this relates to undergraduate work placements. There is a focus on: portfolio content and assessment and the relationship to discipline base; issues in effective bridging of the theory-practice gap and in effective learning and its link to assessment; the added value if any, of e-portfolios compared to p-portfolios as a portfolio building method and as an assessment tool.

The literature review helped to inform the question areas for the survey of placement units (Chapter 4). The survey aimed to understand: how portfolios are being used to contribute to the student learning experience; how they are used to provide the evidence for assessment and the advantages, if any, of e-portfolios in these two functions. The literature review helped also to provide context for the review of electronic packages (Appendix 5) and the case studies of portfolio use (Chapter 5).

The search strategy for the portfolio and assessment literature is presented in Appendix 1 and the summary results of the search are presented in Appendix 2.

Employability and work based learning

The HEA has a strong interest in employability and in work based learning understood as education for employed students; but there is a more limited interest specifically in undergraduate placement students. Nevertheless the QAA sets out a code of practice relating to placement learning that provides guidance to HE on ensuring quality of learning from placements. The National Council for Work Experience has derived a standard for work placements offered to chemistry students by GlaxoSmithKline (Little 2004: 16).

Regarding **employability**, Little (2004:2), in a paper for ESECT (the Enhancing Student Employability Co-ordination Team of the HEA) defines employability as *"a set of achievements, understandings and personal attributes that make individuals more likely to gain employment and to be successful in their chosen occupations".* She refers also to another paper in 2004 by Yorke and Knight that defines employability as *"a blend of understanding, skilful practices, efficacy beliefs (or legitimate self-confidence) and reflectiveness (or metacognition)".*

Regarding what kind of experience is sufficient to enhance employability, in 2000 the government called for all HE students to have a minimum period of work experience as part of a drive to enhance students' transferable skills and to make HE more responsive to the needs of business and the economy.

Broadly, Little (2004:2) defined **work-related learning** as *"any learning that is intended to enhance students' grasp of working life and their employment".* There is a focus often on transferable skills development plus work experience where possible.

An example of institution wide implementation of work-related learning is in Liverpool John Moores University. The university has remodelled its undergraduate programmes in order to equip all students with graduate skills for employability – called WoW or world of work skills. They state that *"a conventional academic degree alone is no longer sufficient to prepare people for successful careers. Graduates need both challenging development and high level skills"* (WoW Advisory Panel announced in www.ljm.ac.uk). There are eight skills for graduates which are recognisable as commonly a focus also of skills development in undergraduate placements. These are: analysing and problem solving; team working and interpersonal skills; verbal communication; written communication; personal planning and organising; initiative; numerical reasoning and information literacy and IT skills (Degrees with added WoW factor www.ljm.ac.uk). The university has established a Graduate Employability Centre that pulls together the more advanced WoW skills of project management, organisational awareness and negotiation in addition to the graduate skills. The skills set is achieved through degree teaching and work-related learning (paid and voluntary) including sandwich degrees. The university stresses employer links and professional accreditation of degrees and offers students the opportunity to achieve a 'skills statement' proving competency as an additional certificate alongside the student's degree. Evidence for the certificate is based on PDP sessions and an e-portfolio of evidence (Graduate Development Centre Opens, www.ljm.ac.uk).

However, Little (2004: 2) defined the narrower concept of '**work based learning'** as *"derived specifically from doing a job of work and taking on a workplace role"*. Referring to a 2003 paper by Johnson and Burden she suggested that many of the employability skills wanted by employers can only be learned in 'real life' situations – although this could take place through very short term work experience. Nevertheless, it is this assumption that employability skills cannot all be 'taught' easily in the classroom (despite increasing implementation of 'employability' modules or other such support in universities) which underpins the claims to added value of undergraduate work placements as well as work based learning understood specifically as employee professional development.

As indicated above there are various options for offering work experience and enhancing employability as well as the traditional sandwich degrees and degrees

involving clinical practice which are the focus of this study. There are students involved in short placement and 'live' projects with employers. There are some universities that accredit part time paid or voluntary work or internships, sometimes through reflective writing or reflective learner modules designed to enhance employability (Little 7-9). There are as well work based programmes of study designed for employees and employers concerned with workforce development, such as those at Middlesex University, under the aegis of the National Centre for Work Based Learning (Little 2004:10).

Regarding work based learning by students who are already employees, Nixon et al (2006:8) prepared a report for the then Department for Education and Skills which focused on provision of education for employees of specific employers concerned with workforce development. They referred to a 2006 paper by Brennan and Little that defined work based learning as a means to support *"the personal and professional development of students who are already in work and the focus of the learning and development tends to be on the student's workplace activities".* Relevant for this study, they state that work based learning is an integrated, experiential and trans-disciplinary approach to learning (Nixon et al 2006:46); this description would hold for the aims and objectives of sandwich and professional HE qualifications. Portfolios are a common tool for dealing with the complexity of what is being assessed in work-based (including placement) learning generally.

But Nixon et al suggest that there is more to be done to demonstrate how work-based learning fits the HE pedagogical mission, to unpack it and to highlight what works (Nixon et al 2006:53). The authors make the point that *"from an academic perspective, work-based learning remains a contested area, not least because it challenges the very essence of universities as the primary source of knowledge"* (2006: 18).

Although this study is focused specifically on undergraduate work placement including clinical practice, Nixon et al's challenge may underlie some of the issues that are present in the literature discussed later in this Chapter concerning if and how learning takes place on placement, what is being assessed in placement portfolios, by whom it is being assessed and the validity of the assessment.

P- portfolios and e-portfolios: origins and definitions

Portfolios have been in use in placements for many years, though the literature on portfolios is largely from 2000. They grew out of print-based student portfolios and before that, artists' portfolios. Broadly portfolios emerged as a tool to provide evidence of achievement, especially where achievement is complex to assess.

Portfolios gained prominence in HE in the USA from the mid-1990s and are still most commonly used by education students to provide evidence of competency

related to license to practice/ certification. In the UK, from the mid-1990s they were taken up in disciplines such as medicine and nursing which also required evidence of competence in professional practice. Many of the concerns discussed below about the link between theory and practice and the extent of autonomous learning are present in the nursing literature.

Other disciplines have developed portfolios to promote and record students' learning and skills; these disciplines include business, engineering and architecture (Lorenzo and Ittelson 2005:3).

Because portfolios are most used by students in education studies and secondarily in other disciplines concerned with professional practice, the academic literature is mainly concerned with those fields of study. Examples of literature on e-portfolios include those for medicine (Carraccio & Englander, 2004) (Supiano *et al.*, 2002) nursing (Lammintakanen *et al.*, 2002) and education (Zeicher & Wray, 2001). Butler's review makes clear that thinking about portfolios is most advanced in teacher education and most general statements about portfolios have to come from that field (2006:1).

However, this study aimed to focus on the disciplines of business and nursing, though not exclusively so. Nursing was chosen in order to clarify any issues that might specifically arise in the context of license to practice. Business was chosen as an area that commonly has sandwich placements[4] and because two of the authors are involved in placing work based learning students from a Business School. There are not agreed and single definitions of a portfolio in nursing and no definition could be found specifically for business.

Definition of a portfolio

Butler provides a generic definition of a portfolio as "*a collection of evidence that is gathered together to show a person's learning journey over time and to demonstrate their abilities. Portfolios can be specific to a particular discipline or very broadly encompass a person's lifelong learning"* (2006:2). They may include various pieces of evidence including samples of finished and unfinished writing, images, peer, mentor and supervisor observations etc., but Butler emphasis that *"it is the **reflections on the pieces of evidence**, the reasons they were chosen and what the portfolio creator learned from them, that are the key aspect to a portfolio"* (2006:2) (our emphasis).

Gomez (2004) in a paper for the HEA defined a portfolio as *"a collection of work or 'artefacts' that is **selected by a student**"* (our emphasis) to showcase abilities,

[4] Specifically regarding sandwich students, in 2002, they were 17.5% of the full time undergraduate population but some disciplines are more likely to have sandwich students. Around a quarter of students in the following disciplines are enrolled in sandwich degrees: agriculture, architecture, building and planning, business and administration and computer science (Little 2004:7). A minority of sandwich placements contribute to degree credits. Many have stand alone certificates.

provide evidence that learning has occurred, evidence that learning outcomes have been met and *"often an element of **reflection on the tasks reported"*** (our emphasis).

Portfolios may have one or several purposes. In their paper on the results of a questionnaires survey of student nurses, Nairn et al (2006:1510) referred to a study by Morgan in 1999 that identified nine different types of portfolio based on the definition of a portfolio as *"a record of learning that focuses on a student's work and his/ her reflection on that work".* Types of portfolio included 'assessment portfolios' that document student learning according to curriculum learning outcomes and 'skills' area portfolios that demonstrate acquired specific skills such as problem solving. In addition, in nursing, the portfolio of evidence must demonstrate fitness to practice.

Very few papers were found for business related subjects and none specifically defined what is a portfolio. Ellis (2000) referred to transferable skills development arising from work placements for graduate sales professionals. Huntingdon et al (1999:109) referred to a portfolio of evidence for undergraduate students in retail which showcases their work and reflects regularly on their activities and professional development. These retail business students are assessed by academic tutors for degree credits, in three areas: professional practice (joint appraisal by employer, student and liaison tutor) personal and management skills (tutor assessed) and a placement project (tutor assessed). No more recent papers were found, but the survey results reported in Chapter 4 indicate that there remains a focus on transferable skills' development and competency in their deployment in the workplace, as core portfolio content in business areas of study. This may reflect the fact that business' students' placements do not necessarily take place in the precise sector or role that the students will enter as graduate employees.

Definition of an e-portfolio

E-portfolios are essentially collections of electronic materials managed by the student, and often online. There are various definitions of e-portfolios, and it is acknowledged by BECTA that *"there is no standard definition of the e-portfolio product"* but they suggest *"it is most useful to think of e-portfolios as providing a way of recording and supporting the personalised (or tailored) learning process"* (partners.becta.org.uk).

JISC defines an e-portfolio as "*a purposeful aggregation of digital items - ideas, evidence, reflections, feedback etc. which presents a selected audience with evidence of a person's learning and/or ability* (*"*http://www.elearning.ac.uk/subjects/pdpfold*).*

Lorenzo and Ittelson (2005:1) expanded the notion of an e-portfolio to be *"A digitised collection of artefacts including demonstrations, resources and accomplishments of an **individual, group or institution"*** (our emphasis) but this

study will focus on individual student e-portfolios only. The authors note that an e-portfolio is more than a collection – it is an administrative tool to manage and organise work and there are tools to control who has access to it. Compared to p-portfolios (paper portfolios) there is scope for additional impact on learning in the opportunities for interaction and feedback (2005:2).

Choice of e-portfolio system

It should be noted that there are a variety of electronic routes to portfolio building. Butler (2006:18) refers to four options:-

1. In house - designed for institution specific requirements.
2. Open source available over the internet (can be used free and adapted, but there may be maintenance costs and a slow rate of upgrade).
3. Commercially available system 'bought-in' – whether a bespoke e-portfolio package or a virtual learning environment such as Blackboard which has functionality for many portfolio activities.
4. Common tools – such as Microsoft Word, internet browsers and so on.

Butler provides a list of questions to address before making a choice of approach that will not constrain either the process or the end product. The case studies in Chapter 5 help to address these issues for placement units.

Types of portfolio, their purpose and audience

Types of portfolio

The study by Nairn et al (2006) referred to above, identified several different types of portfolio including those designed for assessment, skills' recording and evidence of fitness to practice. Gomez (2004) referred above to showcasing student abilities and evidence of learning. The same kinds of distinctions are made in Butler (2006:2-3) with reference to a study from 2001 by Zeichner and Wray: a 'learning' portfolio which documents a student's learning over time; a 'credentials' portfolio for registration/ certification purposes and a 'showcase portfolio' for applying for jobs. Butler refers also to a 2005 study by Abrams and Barrett which has also three categories of portfolio. There is a 'process' portfolio – a collection of work showing a learning journey; a 'showcase' portfolio to demonstrate achievements either from study or workplace and an 'assessment' portfolio prepared specifically for assessment.

Purpose and audience of portfolios

What is clear is that these different types of portfolio are related to the different potential uses of portfolios – for learning, professional development, assessment or job applications. They may be seen and/or judged by peers, mentors, workplace assessors, academic visiting tutors and potential employers. What is clear also is that some portfolios perform several of these functions and that there may be difficulties in integrating them into one process and product.

Regarding the contribution of portfolios to learning, Butler (2006: 3) said that constructing portfolios gives students a broader sense of what they are learning and how that learning takes place. Constructing a portfolio can be a route also to personal development. Portfolios, according to McMullan, are used *"not only to inform, but to transform the student"* (McMullan 2006:334) through integration of theory and practice.

Regarding professional development Carryer et al (2002) looked at clinical career pathways (CCP) in nursing in New Zealand and reported that many nurses dislike CCP as an extra and unnecessary demand while others thought it valuable for professional development. However, empirical results showed that those who had completed a CCP portfolio were more knowledgeable and had more positive attitudes than nurses who had not.

Brooks (2007) looked at the effects on adult learners of completing a Professional Assessment and Development college course which included building an e-portfolio and reflective writing. Brooks concluded that there is a significant change in motivation and self-efficacy due to task analysis.

The role of portfolios in different disciplines

Art and design portfolios are collections of visual art accompanied by text which aim to foster students' self assessment and help form their artistic **identity** (our emphasis). In education too there seems an emphasis on developing professional identity as a teacher. Validity is an issue and work is often assessed by several independent evaluators (Butler 2006:9).

Referring to the USA Butler states that medical education has shifted to **achievement** and maintenance of competencies and that portfolio assessment is seen as the most effective way to give formative feedback and measure progress. However, there seemed a limited focus on reflection and the main role of portfolios is to "*assess performance in authentic contexts*" – a *"dossier of evidence."* As above, there is a major concern with inter-rater reliability. Nursing portfolios are part of the same trend to assessing practice competencies. However, as well as a means of showing professional growth, accrediting prior learning and showing evidence for registration they are intended to facilitate **lifelong learning**. Nursing literature too is concerned with the validity of assessment and recommends including multiple independent assessors and ensuring clear marking criteria (Butler 2006:5-6). Many of these validity issues appear to arise from attempting to judge collections of evidence.

There is very little published about business students. However Morgan and Turner (2000) in their paper on added value of placement for human resources students in Glamorgan Business School emphasised an appreciation of the overall business environment and employability through skills development. To add value to the employability arising from the sandwich degree they imposed external accreditation, first through NVQ, which proved too resource intensive

and then through the opportunity to gain professional membership of the Chartered Institute of Professional Development (CIPD) (2000:454-455).

However, Butler cautions that learning and reflection can get lost in the drive to measure competency. Referring to the conclusions of Zeichner and Wray in 2001, Butler (2006:4) said that the inherent conflict in the different roles of portfolios – for example gaining employment versus professional development and assessment means that there should be different portfolios for each purpose. Many e-portfolio packages have the capability to produce different portfolios from a set of 'assets' with which the student populates their portfolio (tasks, thoughts, meetings etc.). However, it is interesting that although Butler's review is confined to e-portfolios, she does not suggest their capability can overcome the conflict of objectives between learning and assessment.

The structure and content of portfolios

There are differences in the structure and content of portfolios or their elements that serve different priority purposes and in different disciplines. For example, what Butler refers to as a 'credential portfolio' (2006:2) is mainly used for registration or certification for license to practice. In some disciplines such portfolios have a more limited reflective content and a greater emphasis on evidence of competence – often 'signed off' by workplace assessors. However, the literature emphasises that reflective writing – and dialogue with tutors about its content - is the route to the integration of theory and practice that contributes to learning and professional development. It enables also assessment of aspects such as attitude and motivation which are difficult to assess in other ways. Later on this Chapter discusses the impact on students of a possible conflict in portfolio objectives raised by Butler (2006) above, – between assessment – in this case evidence of professional competence - and the portfolio process itself as a learning tool.

The structure of portfolios – an example from nursing

In their survey of HE nursing programmes in the UK Endacott et al (2004:251-253) referred to a typology developed by Webb et all in 2002. The four models are:-

1. **Shopping trolley**: this is little more than a store for a collection of artefacts (pieces of evidence). The type of artefacts collected is student led, and as McMullen et al (2006) and Nairn et all (2006) found (both for nursing), many parts of the portfolio were not viewed by mentors or tutors, leading to some student misapprehensions about their purpose and limited belief in their efficacy for learning and professional development.
2. **Toast rack**: the portfolio is composed of discrete elements that deal with different aspects of practice or theory collected into a binder (the rack) and the set of elements may be informed by external requirements or good practice. However there is no overarching narrative and the portfolio is not necessarily subject to assessment.

3. **Spinal column**: the portfolio is structured around practice competencies or learning outcomes (the spine) and evidence is slotted in to show how each competence is met. Assessment requires reflective writing addressed to each competence or outcome and evidence of learning.
4. **Cake mix**: evidence from theory and practice is integrated into the portfolio as a whole and the 'cake' – which is greater than the sum of its parts – is assessed.

Endacott et al found evidence of more than one model being used at different levels on the same site. However, they found evidence everywhere of evolution in portfolios away from the shopping trolley model – a feature of some programmes in the recent past - in the direction of spinal column and cake mix (2004: 253). This was felt to be important in terms of the integration of theory and practice relative to the 'extra work' which students and tutors perceive portfolios to require. However, the authors noted continuing problems perceived by students of inter-rater validity (2004: 254)

Cake mix structures were most likely in postgraduate programmes (Endacott et al 2004:255). In designing the portfolio assessment criteria for their master's level nursing programme, Jasper et al (2005) argued that only the spinal column and cake mix models enable demonstration of the higher learning attributes identified by the QAA.

Student led or prescribed portfolio content?

Butler (2006:4) acknowledged the difficulty in finding a balance between student-led portfolios that can lead to superficial reflection and limited evidence, and heavily prescribed content that may reduce the sense of ownership and cause resentment.

Gallagher (2001) described a standards based portfolio for New Zealand nurses, which was criterion referenced and therefore the students had no choice about the content or the marking criteria. While the survey indicated that students were satisfied with assessment, success criteria were not clear and the link between theory and practice was not as strong as expected. The author intended to move to a less prescriptive form of portfolio that enabled each student to better demonstrate how he or she has met the learning outcomes.

Gallagher's paper supports the constructivist theories of learning which advocate that learning has to be constructed by learners themselves rather than being imparted by teachers, so that portfolio assessment should require selection and justification by the portfolio author (Tiwari and Tang 2003:270). But students in McMullan et al's (2005) study of nurses were responsible for deciding on much of the evidence base for their portfolio yet the authors reported student anxiety in deciding what to put in their portfolio and stated that many of them found this time consuming, resented the process and did not believe it contributed to independent learning. In their study (which involved also a control group who

continued to prepare standard essay assignments), Tiwari and Tang (2003:232) found that students experienced anxiety about constructing their portfolios. However those students who gained the highest marks had taken the most active steps to address their uncertainty and had developed a better ability to apply theory to practice. They found also evidence of spontaneous collaborative learning through the formation of learning groups to address portfolio preparation (Tiwari and Tang 2003:274).

Overall, the literature suggests that nursing portfolios and those of related disciplines that involve assessment of license to practice are much more constrained by externally imposed requirements to document evidence of competence. There is a risk of student confusion (and tutor confusion) as to what constitutes the portfolio and what is its purpose for the student and the external audience.

For example, many studies from nursing indicated that students (and some tutors) focused on getting 'sign off' of competence from workplace assessors and they were less concerned about reflective writing or applying theory to practice, especially if this was not assessed, or even viewed, in some cases (Dolan et al 2004). Other studies suggested that tutors are perceived by students to be more concerned with assessment of reflective writing in nursing theory despite the student priority on clinical competence (McMullan et al 2005). Further, some students felt that the learning outcomes were not appropriate to particular practice placements. They also resented the burden of assessment: *"students felt that they ended up concentrating more on getting everything 'signed off' rather than learning more about their placement areas and clinical skills"* (McMullan 2006:340).

Endacott et al's study indicated that nursing institutions have evolved in terms of decisions regarding the optimum structure of portfolios. This paper refers also to evolution of appropriate guidance including a greater focus in the reflective writing element on critique as opposed to 'feelings' which the authors believed to be inappropriate and the source of student concern regarding assessment and privacy (Endacott et al 2004: 254).

It seems likely from the evidence above that both tutors and students in some institutions were struggling to adjust to a pedagogy appropriate to portfolios as an assessment tool, in a context where the drive to implement portfolios came from external professional bodies. Magill and Herden's paper (1998) is interesting for its discussion of the fight to establish student portfolios of learning outcomes in an American business school competing for students. The school staff driving the introduction of portfolios believed it would add value to the degree and student employability and be an attractor for potential students (and their parents) who could see what they were paying for. Their paper pointed to the major changes to belief systems and pedagogy for faculty staff who felt that their teaching role concerned specific knowledge and its assessment and who felt that their role did

not involve skills' assessment. The business school introduced student portfolios to accommodate the new form of assessment. Students were encouraged to include in their portfolios outcomes based on life and work experience as well as classroom learning. The audience for the portfolios is both the faculty staff who will assess the portfolios and potential employers, who will gain a better understanding of the individual's skills achievements than they would solely with a transcript of classroom marks. However, the authors noted students' lack of enthusiasm. This may have arisen because the portfolio was driven by an institutional need to compete for students. The portfolio was therefore based on demonstrating achievement of learning outcomes and was not itself a route to learning for most students (1998:578).

Morgan and Turner's paper discussed human resources placement students in a UK business school. They indicated that the content of the portfolio of evidence was imposed externally there also, by the CIPD requirements that they opted for to add 'marketing' value to the placement year. The portfolio evidence related to workplace competence in four functional Human Resource areas – employee relations, development, resourcing and reward. There is also a 'personal report' which provides an overarching narrative and an element of reflection. A completed portfolio provides evidence for graduate membership of the Institute (2000:455). The paper reported that students valued the opportunity to compare their activities against the CIPD educational modules. However the authors believed they had more work to do in providing opportunities for students to 'learn how to learn' and in planning and guidance. The CIPD also required staff to have experience of assessing portfolios of evidence - this was available due to the prior activities of the Business School (2000:456).

It seems that introducing externally imposed content and criteria for assessment to portfolios adds value as 'certificated' employability. However, it may have also some disadvantages in terms of student and staff perceptions of the aims of the portfolio, especially as between recording accredited learning and learning to learn and improve practice through reflection. This potential conflict requires careful consideration in the portfolio design and assessment methods and clear information and guidance to students, tutors and employers.

The role of portfolios in assessment of work based learning

Portfolios as a tool for assessment of placement learning and achievement

Gomez (2004) suggested that portfolios *"provide a more rounded and reliable assessment of achievement than written examination or essay assignment alone".* An advantage of portfolio based assessment for work placement is that the nature of the work experience and learning achieved varies between placement opportunities.

Butler (2006:3) stated that the portfolio process is a way of learning and a learning journey in that portfolios provide a means to translate theory into practice and document student learning over time.

Practically, the purpose, content and appropriate assessment of portfolios may differ with the structure of work placement itself. Students in those disciplines requiring license to practice normally undertake placements in several of their years of study and sometimes there are several shorter placements in one year. Short placements are common also in art and design and architecture – often unpaid internships. On the other hand, business, computer science and engineering students normally undertake one twelve month placement, normally between their second and final years of study and students are normally paid. Some institutions have moved from two thin to one 'thick' sandwich because of employers' need to recoup their investment in salary and training for the placement student. Portfolios that are built on one year of full time paid employment with a single employer will be different necessarily than those in which students are collecting dossiers of evidence of competence from a variety of assessors in a variety of placements or projects. It may be the case that business and computer science and engineering students have better opportunity to develop a portfolio of the 'spinal column' or 'cake mix' structure in which effective reflection and meta-cognition is more readily achievable. However, the integration of academic theory and practice in reflective writing may still prove a challenge to design and to undertake.

There are likely to be costs to HE of wider use of portfolio-based assessment in placement and in university settings. Morgan and Turner (2000:458) noted, like Magill and Herden (1998), that wider use of portfolios will require significant staff development because portfolio assessment is outside the traditional way that academics have marked students' work. Further a very structured set of placement requirements is costly to the host employer. Morgan and Turner reported some problems with host employers, not all of whom could offer the variety of work experience or invest the time in the student's capacity to achieve CIPD membership. For some it is too prescriptive of what they will provide for the student employee.

Reflective writing and learning

Reflection on work experience is asserted to improve not only transferable skills but student capacity to learn.

Referring to a paper by Hills et al 2003, Nixon et al (2006: 35) stated that by *"learning through work we mean that learning outcomes are achieved through activities that are based on, or derived from, the context of work or the workplace".* The characteristics of work based learning as defined by Learndirect (Nixon et al 2006: 40) include:-

- Task related (performance of work place tasks and tackling workplace issues).

- Innovative (new techniques and approaches are derived for new situations).
- Autonomously managed and self-regulated (without formal tuition – students take responsibility for their own learning).
- Concerned with enhancing personal performance and organisational performance.

Little suggested that it is not work experience per se but learning derived from it and reflection upon it that enhances undergraduate learning capabilities (Little 2004:14), Nixon et al refer also to Raelin's 2000 paper which argues that the *"acquisition of meta–competence - learning to learn - alongside new knowledge and technical knowledge is one of the defining features of work based learning. That is, the pedagogy is experiential in nature"* (Nixon et al 2006:39).

Moon (2005) defined reflection as *"a form of mental processing that we use to fulfil a purpose or to achieve some anticipated outcome. It is applied to gain a better understanding of relatively complicated or unstructured ideas and is largely based on the reprocessing of knowledge, understanding and possibly emotions that we already process'.*

Moon distinguishes between deep learning, which involves reflecting on what one knows and modifying it when confronted with new material and surface learning, which is concerned only with the retention of new material. Moon goes on to say that ability in reflection is often linked to metacognitive ability and effective learning. Placement portfolio reflection on workplace tasks, skills' deployment and career planning are therefore opportunities for deep learning.

In their empirical study of 254 pre-registration diploma nurses in a UK university McMullan et al identified some resistance by students to self-reflection, anxiety about what it means, about privacy and the potential negative career effect if their reflections on their weaknesses were read by those in authority. McMullan et al showed that 74% of surveyed nurses agreed that portfolios helped them take responsibility for their professional development and 60% agreed that portfolios improved their reflective skills, but only half agreed that portfolios helped them identify their strengths and weaknesses or develop independent learning. Just 42% felt that portfolios helped promote critical thinking and 31% that portfolios helped to improve their self esteem. These findings might be partially explained by the fact that 73% of the students thought that portfolios took a great deal of time and only 37% thought they had good reflective writing skills (McMullan 2006:337). Students felt that there was too much emphasis on theory and academic reflective writing and not enough importance placed on clinical skills. This might be explained by the finding that only 32% of students believed they received clear guidelines in the purpose of the portfolio (McMullan 2006: 337-339, 342).

It is notable that Jasper (1999) found that reflective writing is “not a *natural* (Jasper’s emphasis) process but has to be learnt and practiced” (1999:459). The realisation of writing as learning is not immediate. It takes time and practice but facilitates personal development and potentially, through better analytical and critical skills, impacts on the conduct of professional practice (1999:461). This finding may indicate a need for explicit support for reflective writing skills, potentially before students go out on placement, as well as clear formative support for it while the students are on placement.

According to Lucas and Tan (2007:4) there is an increasing emphasis on developing reflective capacity in undergraduate education and professional development. This is because *“it underpins the exercise of professional judgement and ethical awareness and is regarded as an integral part of learning to learn. Since the adoption of the Dearing principles, universities in the United Kingdom (UK) have sought to integrate reflective practices into their undergraduate curricula. The need to develop reflective practice is also an essential part of professional learning*.”

The authors looked at the development of reflective capacity in undergraduate sandwich business and accounting students and how it is related to academic performance. They found that students varied in their capacity to reflect and exercise judgement. They suggested this is related to the strength of students’ internal sense of identify or beliefs. However the authors found problems with some elements of their questionnaire instrument, but one robust element indicated that the students’ scores for critical reflection did not change over the placement year and were not significantly related to their final average year mark. Despite this, placement students’ final year mark was higher than non placement students, confirming the evidence of several earlier studies (Lucas and Tan 2007:6). But, accepting the validity of their critical research tool, this change they argue is not due to a developing level of critical reflection. On the basis of interviews with students, the authors argue that the improved academic performance arises from a developing sense of self that leads to a more focused approach to learning. This seems to accord with the findings of those studies from education that the role of placement portfolio work is to assist in the development of the professional identity of the portfolio author.

Lucas and Tan suggested also (2007:7-8) that in a restricted way, the students’ greater range of experience builds on their prior learning and can lead to cognitive development. But overall the authors believe the placement contribution is made largely through the impact on personal rather than cognitive development. It is Lucas and Tan’s (2007: 8) view therefore that there is unmet potential for learning from placement and it could contribute more to undergraduate education if there were a more effective learning environment.

Little (2004:16) referred to the importance of ‘real time’ reflection guided by a framework. The record may be a learning log or diary and may be a part of PDP.

She noted that the Learning and Teaching Support Network's Generic Centre (part of HEA) commissioned a systematic review that showed that PDP enhances students' academic learning and achievement but there was no research evidence on its broader impact on self-development and employability.

Little pointed out (2004:5) that the employability premium of sandwich students (lower unemployment, higher salaries, more graduate jobs) is short term and that after three years, non sandwich students have 'caught up'. This again raises the question of the nature of the advantage achieved by placement students and whether placement portfolios effectively support reflection such that 'learning to learn' does take place. It might be expected in this case that their early advantage would drive placement student careers more effectively compared to their non-placement peers.

Moon (2005) suggested that self awareness and control of emotions are important to academic performance and that PDP (including portfolio activities) provides opportunities for emotional engagement with subject learning, but that students, without help to develop their reflecting thinking skills, often get stuck at the level of description.

Important for this study is the reference in Nixon et al to the approach of the University of Leeds, in which the students' learning and reflective practice is supported by university staff, an identified business mentor and the individual's line manager (Nixon et al 2006: 22). Clearly, reflective practice cannot be assumed, but must be supported holistically – and this is expensive. Little too, noted the need for comprehensive support for student learning but suggests that it is not available. Student learning *"may be greatly enhanced by prior induction and briefing, facilitation of ongoing reflection by the student, debriefing and identification of outcomes. However, although many schemes refer to 'preparing' students for work placements, at least one study found that students on work placements tended to refer to their preparations in terms of help with securing a placement, rather than help with identifying and articulating learning gains'* (Little 2004:16). The survey results in chapter 4 of this report indicate what kind of support is offered pre-placement and show limited support for enhancing capacity for reflective practice.

Learning and assessment

In her review of the literature, Butler concluded that the best role for e-portfolios (indeed, for portfolios) is in formative assessment because they make use of tools of reflective practice, narrative and professional and peer support (2006:17). It is interesting that the survey results of placement units in Chapter 4 of this report indicate a strong preference for summative as well as formative assessment.

Little noted that assessment strategies influence students' approaches to learning (Little 2004:15) and that there is a range of assessment types from

‘satisfactory completion’ through certification to degree credits. She recommended ‘low stakes’ or formative assessment to support learning from work experience and proposed it should be accredited so that it is taken seriously (Little 2004: 14). She suggested that because universities are moving to progress files (PDP) there is increasing emphasis on documenting evidence of learning in this way. However, there are problems with certifying fitness to practice – because it is expensive to assess complex achievements reliably and from various sources. In the end, graduate employers have to be able to trust the judgements evident in the portfolio assessment (Little 2004:16).

Tiwari and Tang (2003) examined the impact of assessment on student learning and referred to ‘backwash’ – this occurs when the assessment rather than the curriculum determines learning – what students learn and how depends on what they think they will be assessed on (2003:69).

Concerns about the link between content, learning and assessment are evident in McMullan et al. They referred to a study by Gannon in 2001 that suggested a negative correlation between portfolios as an assessment tool and both the honesty of reflective entries and whether the assessment is summative or formative (McMullan 2006:335). McMullan et al’s results showed that 49% of responding students said they found it difficult to be honest for their summative assessment but 41% found this also for formative assessment. Students feared *“that anything they wrote might be used against them”.*

It is noteworthy that despite the evidence presented earlier that nursing students disliked portfolios that were not assessed (Dolan 2004) few students thought that assessment increased the learning value of the portfolio – and fewer felt formative assessment only (12%) increased it compared to the percentage who believed summative assessment increased the learning value (21%). Only 24% agreed that they liked the portfolio as an assessment tool but this may be explained by the finding reported earlier that only 32% believed they received clear guidelines as to the purpose of the portfolio (McMullan 2006: 337-339).

Moon (2005) stated that assessment of reflection needs careful thought. She suggested there be an explicit statement of the role of reflection and its purpose – which will influence the decision on the learning outcomes. She suggested also that the criteria for assessment are made explicit and whether it is the reflection that is being judged or its product. She makes clear that if the process is being used to enable students to learn to reflect then it is this capacity that should be assessed. Finally she suggested that students are given examples of reflective writing and that they evaluate the learning that is being gained.

Are there any advantages of e-portfolios for learning or assessment?

Barret and Knezek (2003) quoted in Butler (2006:1) stated that e-portfolios *should* be electronic versions of paper portfolios because *"the same thinking about purpose, pedagogy and assessment lies behind both kinds of portfolio"*.

If this is so, then the only apparent learning advantage of e-portfolios concerns better capacity in the use of ICT. Indeed Chappell and Schermerhorn (1999: 652) explicitly referred to their *"initiative to incorporate electronic portfolios or ESPs into our aims to enhance technology use in our institutional programs at Ohio University…career portfolios …fits well with the recognised need to mainstream technology into the teaching of management in higher education"*. As Chapter 2 indicated this is one of the aims of UK government.

However, regarding facility with ICT itself, students may achieve this in their placement role but also in other areas of their lives. The world has moved on and social networking sites are familiar technology to more and more students. Indeed, the authors' own experience is that there may be a more pressing need for business students especially to use industry standard spreadsheets, databases and statistics packages more frequently, realistically and at a higher level in classroom study, to prepare students for placement employment and graduate jobs.

Chappell and Schermerhorn (1999: 654) asserted another advantage for e-portfolio approaches: "*thought processes are affected by the shift from a paper to an HTML environment….hypertext encourages 'multifarious ways of thinking' as opposed to the more linear processes involved in print and word processing writing. Proponents of electronic portfolios consider them to be much more than the simple transfer of paper onto an electronic site"*. They argue also that hypertext transfers the choice of reading pattern from writer to reader, affecting the traditional roles of the involved parties. However, the results of the focus group of students reported in Chapter 5 indicated that some students found links a distraction and preferred the linearity of offline work as more effective for getting a task done.

Specifically relating to work placement, there are government criteria that stress the importance of practice based learning to the achievement of other kinds of transferable skills in professional development and life long learning. Apart from Chappell and Schermerhorn's assertion above about learning styles and relationships arising from the use of Hypertext, e-portfolios may not have any advantage in achieving these transferable skills. Indeed, p-portfolios may be more student-centred in that there is no risk that their construction is technology driven; it is embedded in the learning goals and is accessible to all students regardless of technical competence.

Nevertheless, regarding the management and content of the e-portfolio, Gomez (2004) stressed the advantages of flexibility, diversity and richness of artefacts, a dynamic environment and ease of updating. Lorenzo and Itellson (2005) added also the opportunities for interactivity and links.

Alhammar (2006) investigated e-portfolios in pre-service education in the Gulf region. It is one of the few studies to compare and contrast e-portfolios and p-portfolios. Based on learning theories from constructivism and cognitive flexibility theory, Alhammar argued that e-portfolios contribute to deepening professional knowledge and skills, self reflection skills and technology use.

Gomez added that the e-portfolio is a more flexible way to assess and store student achievement especially when the student is remote from the university, for example on work placement. The portfolio can be stored on a computer hard drive or on the web and therefore viewed remotely. Some VLEs allow private storage space, enabling the author to control access to it. But while some authors believe e-portfolios are more portable, others believe that p-portfolios are usable in more settings because they do not rely on ICT.

Butler lists many benefits of e-portfolios including skill development, evidence of learning, feedback, reflection, psychological benefits, assessment, artefacts, maintenance, portability and sharing, access, audience, organisation, storage, cost and privacy. However many of these benefits are not dependent on an electronic medium although an e-portfolio may have advantages described above in providing a ‘rich picture’ of student learning and competencies, a broader range of pieces of evidence and more effective feedback and more efficient storage (Butler 2006: 10-11).

A potential drawback of e-portfolios concerns the technological competence of the users, which affects ease of use and privacy and public accessibility. Carney (2001) compared e-portfolios and p-portfolios as tools for development for pre-service teachers. Carney concluded that despite difficulties students had in using technology and designing documents for the web, e-portfolios offered greater potential for continuing professional development.

The point is made also regarding assessment that it may be difficult to authenticate the evidence from e-portfolios (Butler 2006:13), but an effective role for tutor visits should address this issue. However, this may imply that e-portfolios cannot substitute remote contact for personal contact for formative and summative assessment.

Overall there is not yet large scale robust evidence concerning the impact of e-portfolios and most particularly their long term impact.

Some points regarding choice between e-portfolio and p-portfolios

An e-portfolio may be a collection of word documents, spreadsheets, images, PDF files, multimedia audio and video files and other electronic files, results from computer assessment programmes, kept online or offline, for example stored on a CD ROM or DVD.

E-portfolios cannot overcome the basic decisions for any portfolio about what is the purpose, who is the audience(s), does the portfolio approach in placement actually enable the development of reflective practice, what support is there pre-placement and in placement for students to developing their reflective skills and is the structure and content of the portfolio appropriate for the purpose, audience and method of assessment? These are pedagogic issues for e-portfolios as well as p-portfolios.

However, e-portfolios potentially offer many advantages as a tool for organising artefacts, compared to paper portfolios. The portfolio template may be available on a web site and the most recent version can be downloaded by the student. The student can modify their portfolio easily. The portfolio can be emailed to the tutor. However, more importantly the e-portfolio is able to be interactive. For example links to resources may be given in the e-portfolio. The student can add resources which may be used later. Electronic discussion forums and email may be used to keep students, tutors and placement teams in touch. Interactivity was one of the recommended requirements stated in the QAA code described in Chapter 2.

Regarding assessment, it may be an advantage for timely feedback (also a requirement in the QAA Code) that tutors may view students' portfolio work and work in progress and upload their comments or assessments. Employers too (and potential employers) may be able to view students' portfolios and may be able to upload their appraisals of students in their organisation (not all e-portfolio packages support external user access).

However, this Chapter and the review of portfolio packages in Appendix 5 show that there are electronic versions of portfolios that are more or less rigid in their structure and more or less populated with content and that the purpose and audience of a portfolio are key elements to be clear about in getting the most out of the implementation of an e-portfolio package. An important issue for choice of e-portfolio approach is whether *"the present generation of template driven e-portfolios will turn out to be too restrictive for many students as they gain skills in gathering and presenting their work and experiences"* (Tosh et all 2005 quoted in Butler 2006: 14). This point is followed up in Chapter 5 which reports on the user case studies.

Chapter 4 of this report (the survey results) illustrates the point made earlier in this Chapter - that it is important not to confuse the portfolio medium and the content - which should address the possibly diverse purposes of the portfolio and

its audiences. The content may be suitable for many different media including paper.

Regarding professional development and job applications, e-portfolios may have some drawbacks. For some license to practice functions of demonstrating capability in the work environment there may be disadvantages to electronic media. For example, it may be simpler to have a paper dossier of ‘signed off’ achievements. Similarly for recruitment purposes, some employers may find it easier to view paper products than visit a website. There may be restrictions also for students in accessing the internet in their workplace (see Chapter 5).

Criteria for success in implementation of e-portfolios

Drawing on the literature, most of the student focused criteria relate to clear information about purpose and assessment, how to construct the portfolio and who is the audience for it. Past good examples of e-portfolios can be helpful in showing students what they are aiming at. Institutional factors concern good planning and support in the long-term (Butler 2006:15-16).

Chapter 4: Results of a survey of placement units concerning portfolios and assessment

Summary

Placement units were faculty based or discipline based, and there was incomplete knowledge of other units in the same institute. Placements were typically compulsory, and consisted of one long period. Numbers of students placed ranged from 30 to 750 per year.

Most placements involved a portfolio, which is typically assessed. Support for students on placement was normally by telephone, email and tutor visits.

Placement units do not seem to be using e-portfolio packages, though there is widespread interest in packages that might support PDP/e-portfolios in placement. Units are considering either e-portfolio products or employing VLEs to support PDP in placement.

Introduction

This chapter presents the results of the questionnaire survey of placement units. The literature review helped to refine the question areas that would be useful to address in the survey of placement units.

The main question areas asked of placement unit respondents included:- the disciplines from which they place students; the content of portfolios; support for portfolio preparation; the type of assessment; the use of e-portfolios and respondents' attitudes to them and finally monitoring and evaluation of placement processes and impact.

A copy of a blank questionnaire can be found with tables of descriptive results in Appendix 3. *To aid respondents, the questionnaire provided respondents with basic definitions of: placement unit; portfolio; type of placement; student learning experience; diagnostic, formative and summative assessment and innovative assessment.* (Please see the sample questionnaire in Appendix 3).

To aid understanding of placement activities, one visit was made to a northern university to discuss pre-placement training and one visit was made to a Midland university to discuss portfolio assessment. An example of an innovative method of pre-placement training and its assessment is presented in Appendix 4, as is an example of an innovative method of p-portfolio assessment.

The questionnaire was distributed by email to the ASET and PlaceNet networks. It was available also on the ASET website. The email was repeated once. The survey was advertised both at an ASET conference and at a PlaceNet conference.

Results reported are descriptive only as the total number of responses relative to the range of questions asked, means that there are too few subjects to split into sub-groups. It seems likely that the response rate was influenced by the presence of a core topic – e-portfolios, which are so far used in few placement units in UK universities.

The results recall some of the issues brought out in the literature review regarding the connection between the purpose and audience for the portfolio and its content; support for reflective practice; student learning and the nature of assessment. The results show also that very few responding units currently use e-portfolio products and there are mixed views about their value and practicality.

Characteristics of the responding units (Questionnaire Section B)

Because respondents could come from placement units in any discipline, Sections A and B of the questionnaire identified the characteristics of responding units. Questionnaire respondents were asked for their university address, to name their role and to identify themselves as ‘administrator’ or ‘academic’. About equal numbers of respondents have administrative and academic roles, held at various levels of seniority. However respondents were promised anonymity unless permission to name them was explicitly requested and consent given. For purposes of follow up, respondents were asked also if they would agree to further contact by telephone or face to face. 12 of the respondents were willing to be interviewed in person and 18 were wiling to be telephoned.

There were 24 respondents from placement units in 19 institutions (in three cases, two or more placement units from separate faculties responded). 21 respondents work in UK universities and one in an associate college of a UK university. Including this latter, twelve institutions were post 1992 UK universities and five were pre-1992 UK universities. All but one of the responding UK units are located in England, the other is in Wales. Two of them do not offer portfolios. There were responses also from two universities in New Zealand one of which does not offer portfolios. There was one reply from a German education institute which was not included because it was an explanation of their different approach rather than a response to the questionnaire.

From which disciplines do units place students?

Different disciplines have placements of different frequency and duration at different study levels (ranging from once only usually for one year to several short placements in each year). As indicated earlier, it is likely that portfolio content and assessment methods will be linked to the discipline and the nature of

its placements. Questions were asked therefore about disciplines from which the responding placement units placed students as well as the particular programmes for which the respondent was answering the questionnaire. 22 (sometimes 21) responding units answered these questions.

Many units placed students from more than one discipline. Twelve (57%) responding units placed business students and ten (46%) placed computing/ IT students - often the same unit placed both business and IT students. Four (19%) units placed engineering students, and three (14%) placed probation students. Two units placed students in each of art and design, education, social work and allied health. Two units did place nursing students (one UK and one New Zealand, but the New Zealand institution answered for another programme). Over half of responding units (52%) also placed from a variety of other individual programmes for example food science and midwifery.

Respondents were asked also about their awareness of the other placement units in their university, but most found this question difficult. None of the UK responding placement units was a central unit responsible for all work placements offered by their university. They were usually faculty based or discipline based units. Very few respondents were aware of the totality of other units in other faculties of their university, or of the kind of service other units offered.

Of the 23 respondents to QB2, thirteen (57%) reported that placement was compulsory, seven (30%) that it is voluntary and three (13%) that it varies by course. Voluntary placement was most likely for business studies students but still only for a minority of responding units.

The 22 responding units who answered QB3 placed between 30 and 750 students per year. Ten (45%) units were placing between 30 and 100 students per year. Six (23%) placed from 105 to 200 students; four (18%) placed from 204 to 271 students and the remaining three (14%) placed from 350 to 750 students. For 62% of units this number was stable, and for equal proportions of other units it was an increase or decrease on the previous year.

Because many placement units place from more than one discipline, respondents were asked for which programme(s) they intended to answer the following Section C of the questionnaire (the placement, portfolio and assessment questions). Twelve of responding units (52%) answered for business related programmes of study. In three of these cases the response corresponded also to placement in computing/IT programmes which had the same placement structure and the same placement unit. One unit each answered Section C of the questionnaire for geography, psychology, food science, nursing, computing,

chemistry (and IT) and engineering. It has not been possible therefore to compare business and nursing as intended[5].

The shortest placement found was two weeks, but 87% of respondents placed students for one, typically 43 – 52 weeks' placement. These respondents placed business, computing and engineering students. Both New Zealand institutions had two placements (one institution responded for engineering and technology, the other for business.) Short placements and repeated placements are common in social work, nursing, midwifery and allied health. However, responding units which placed students from several disciplines mostly did not choose to answer the questionnaire for these disciplines. One which did was nursing. The unit which answered for nursing has twelve placements occurring in all years of study – totalling 91 weeks of placement.

Characteristics of the placement portfolio (Questionnaire Section C)

All placement students are assessed or appraised in some way. In all cases placement included assessment by a university academic.

For one part of QC3 the responses are not easy to interpret. In 19 of the 22 cases there is assessment or appraisal by workplace assessors, but further work is needed to identify what this means in practice. It could mean that university tutors assess students in the workplace. Alternatively it could mean that employer supervisors/ assessors are assessing students. This we think is more likely. However the replies may mean students are being assessed only as part of normal workplace appraisal procedures, or it could be that the employer appraisal is integrated into the placement or portfolio assessment.

In three (17%) cases administrative staff assessed work. In no cases were other types of assessor employed, e.g. peers, despite the recommendations for assessment generally in the QAA Code (see Chapter 2). However it is difficult to see how peer assessment could take place in placement.

Most, but not all work placements involve portfolio preparation by students and therefore it was necessary to separate out assessment of placement and assessment of a portfolio of work arising from placement. Seventeen (81%) responding units said that their work placement students are required to complete placement portfolios, and in all but two of these cases portfolios are assessed. The two units where portfolios are not assessed are from the disciplines of food science and business.

[5] In an attempt to increase the response rate from nursing units, requests were sent to two nursing email lists for units to respond, but this elicited no further response.

Content of portfolios (QC5)

Survey respondents were asked about the content of their portfolios, drawing on a list of elements commonly found. The responses to this question allow an assessment of whether the e-portfolio packages can handle the commonly used portfolio elements. 19 respondents answered these questions.

Evidence of achievement is a common element of portfolios. Normally, the evidence consists of examples of students' placement work/ projects/ activities (fifteen, 79%), However examples of training outcomes are less common – present in ten (53%) portfolios.

Record keeping is a common element of portfolios: fifteen (78%) units whose students complete portfolios include diaries or logs recording daily experience of the workplace. However, only eleven (58%) portfolios include evaluation of key tasks. More research is needed to understand whether and what reflection may be included in these records/ diaries/ logs.

Reflective writing on skills (general reflection on development or deployment of skills and competencies) is also a common element of portfolios, included in fifteen (78%) cases. However, only eleven (58%) units' portfolios include explicit assessment of learning outcomes relative to learning goals.

Looking forward to final studies/ career development is not so common – only eight (42%) portfolios explicitly include personal development plans and only six (32%) include an updated CV.

'Academic' writing is more common, for example, theoretical analysis of the placement organisation or an aspect of it, is included in twelve (63%) portfolios. However, as before, looking forward is less common – only five (26%) portfolios include an element of preparation for dissertations. This is explicable in that not all students may be eligible or choose dissertations for their final year of study. In one case, the dissertation is the means by which the placement year is assessed.

Portfolios tend not to contain personal items unrelated to workplace activity or development. Only five (26%) portfolios include items such as mementos or photos, and these were in business, nursing and engineering.

Portfolios described by the responding units seem to have three main dimensions: collections of 'professional' evidence, reflective writing on skills and applied theory reports. These elements reflect those found in the literature and also the objectives of assessing achievement and supporting learning. However, the weight and balance of the different dimensions cannot be ascertained from this survey.

E-portfolio packages reviewed in this study have the capability to deal with the portfolio elements found in this study. However, one potential area of difficulty is where the student has only hard copy evidence of examples of work or training outcomes.

Support for portfolio preparation (QC6)

Support pre-placement

Nineteen respondents answered these questions. Fifteen (79%) responding units offer an induction session prior to students' going on placement. It is perhaps surprising that there are units that do not, given the evidence from the literature review concerning the importance of guidance on the aims and audience for the portfolio, how to build the content of the portfolio and how it is assessed. However, it may be that units believe that paper or electronically available guidance documents are sufficient. It may be also that these units have other training sessions that obviate the need for a specific induction session on portfolio preparation.

The literature gives an important place to reflective writing as a route to placement learning. The literature indicates also that there is not strong evidence that students' reflective skills are increased by placement, or that students see the relevance of it. But only seven (37%) responding units offer teaching/ training in reflective practice prior to students going on placement. This finding from the survey may help explain the evidence from the literature which suggests that pre-placement support is largely focused on job search and application skills. It may be difficult to offer reflective writing skills in a classroom setting, but one option is to support students to prepare a reflective piece on their part time or voluntary work or other 'real-world' activities as part of preparation for placement. It may be also that if e-portfolios are widely taken up across institutions, students will have more awareness of some tools for reflection, even if channelled rather narrowly and prescriptively (keeping in mind the comment by Tosh (in Butler 2006) about the constraints of template driven portfolios).

Because the focus of this study is on portfolios as an assessment tool, the questionnaire did not ask specifically about support for placement search or pre-placement training more broadly. The authors are aware that units do indeed commonly provide support for CV building, preparation for interviews and psychometric tests, health and safety, professional behaviour, employer presentations and job advertising. Some units provide a more personalised service and others provide more group-based or even module-based support. However, some workplace awareness and professional behaviour sessions can be important not only to gaining a successful placement but to sustaining it. An example of innovative pre-placement training (using a custom built e-portfolio product for part of it) is presented in Appendix 4.

Reflecting the very limited current uptake of e-portfolio packages, only three (16%) of responding units provide teaching/ training in the use of portfolio software prior to placement.

Support during placement

Once students are out on placement, units offer telephone and email contact. All responding units offer tutor visits to the workplace. There are commonly two visits for the year long placements, though there are units with either one or three visits for the year.

The next most common support for students on placement is mentoring by workplace supervisors or assessors, provided in seventeen (90%) cases. Given that many of the responding units are answering for business / IT/ engineering, it is likely that these are workplace employees such as line managers or other supervisory staff. Open comments indicate that the regularity and quality of this relationship cannot be ensured by the placement units. Given the QAA reference to student rights to appropriate supervision and mentoring, placement units may have to do more to inform and monitor employers. One unit noted that it has recognised this need and has produced new brief guidance documents for employers on student, university and employer roles, responsibilities and expectations and the objectives of the portfolio and the process. The unit is committed also to visiting all placement employers new to the unit and has provided a new flag up system for placements where the line manager does not have previous experience of supervising placement students.

Regarding support for reflective writing, thirteen (68%) units provide students with the opportunity to revise draft work following tutor comment on it. However, open comments suggest that what happens differs in practice amongst units. In one university, written tutor comments on draft portfolio work are provided prior to the tutor visits and the student has the opportunity following the visit to submit revised work to gain a grade. Grades accumulate over the year placement. Some other units give this opportunity only for the completed portfolio and the portfolio itself may be assessed only as pass/ fail. Others again may have more ongoing dialogue on the portfolio work. More research is needed to understand what support for reflective writing is in place, how it operates and how it relates to formative and summative assessment.

Twelve (63%) units provide a placement feedback visit to the university during the placement year, but the role of this visit requires further research. It may be that it supports the peer activity recommendation in the QAA code (see Chapter 2).

Portfolio assessment (Qs C9, C10, C12, C13, C14, C17)

Is assessment valued as contributing to the student learning experience?

Fifteen (88%) units said that portfolios were assessed and 100% of respondents agreed that **completing the portfolio** adds value to the students' learning experience (fourteen, 78%, strongly agreed). The same proportions exactly agreed that **portfolio assessment** adds value to the students' learning experience. It should be noted that for the UK respondents, there is no difference apparent in the relative proportions of units from pre and post 1992 universities in requirements to complete portfolios and to assess them.

Given the concerns in the literature about possible conflict between learning objectives and assessment, it would be interesting to undertake follow up research on these results concerning the value of portfolio completion and assessment, especially as the discipline base of units that responded to this survey were not well represented in the academic literature.

The results for the value of portfolio assessment are interesting. All types of portfolio assessment are perceived to be valuable by the eighteen responding units. More units believe that portfolios are useful for formative assessment (sixteen, 94%) than summative assessment (thirteen, 87%). However there is little difference overall or in strength of feeling. Seven of seventeen responding units (41%) strongly agree that portfolios are useful for formative assessment and eight of fifteen (53%) strongly agree about their usefulness in summative assessment. However, reflecting the results of Butler's (2006) review, two of fifteen respondents (13%) disagree that portfolios are useful to assess students summatively (none disagree that formative assessment is valuable).

Ten (71%) of fourteen responding units believe portfolios are useful to assess placement students diagnostically, but just four strongly agree. On the other hand, four units see no value in portfolios as a means of diagnostic assessment of students. This is an interesting result in that if portfolio building is a process as well as a portfolio product, diagnostic assessment could be a valuable part of the process – whether specific skills' assessment or whether diagnostic of reflective writing capabilities. There is perhaps scope for strengthening tutor – student dialogue about student development and the support needed.

Given the concerns in the literature about the extent and depth of reflective practice and learning by students and staff capacity to mark portfolio work, further research might focus on the role and capacity of the visiting tutor. One issue is whether the tutor's role is generally sufficiently developed to support work based learning, portfolio building and assessment. Those institutions allocating tutors annually on the basis of gaps in their teaching timetable are more likely to confront this problem than those with dedicated teams of placement/portfolio assessors.

Who assesses?

No responding unit has peer assessment of portfolios.

100% of units said that university tutors contributed to assessment, or were responsible for all of the assessment, Administrative university staff were involved in assessment in three (17%) units. The distinction between academic tutor and administrator may be sometimes misleading of their roles and competence in placement supervision. The academic literature indicates that assessment of portfolios is outside the normal training of academics. Equally some administrative staff may have long experience, close knowledge of the students or an HR background, which could provide a sound basis for engaging in assessment.

Employers are involved in assessment in only five (28%) cases. In one institution (see the example of the components of assessment in this institution, in Appendix 4), the employer twice provides an appraisal of competency in the workplace in the deployment of a range of key skills. These appraisals contribute part of the mark for the overall portfolio. The academic visiting tutors assess the portfolio written work which includes records, reflection on tasks, skills' analysis, training needs, personal development planning and organisation reports. There is also an oral presentation in the workplace and a short placement report/ extended CV suitable for graduate jobs. All elements receive numerical marks, cumulative throughout the year after sections of the portfolio have been revised and resubmitted, building to a final portfolio mark – including the employers' marks for competence in the deployment of skills in the workplace role. The final portfolio receives a classified Certificate in Work Based Learning but does not contribute credits to the degree. It would be interesting to undertake further research on why employers are not more widely involved and to what extent this is related to whether portfolios are credit bearing for students' degrees.

Are marks normally awarded for portfolios?

Despite the example above (in more detail in Appendix 4), awarding marks is not common. Thirteen of the twenty (65%) responding units said tutors do not award specific marks to portfolios, but in three cases they award 100% of the marks and in four other cases they award between 60% and 80% of the marks for the portfolio. In 80% of cases, employers or workplace mentors do not award marks; in the other 20% of cases, they award between 20% and 40% of the marks. Open responses suggest that in some cases, tutor marks are made following discussion with employers; these appear to be marks for the student's placement performance in certain aspects, rather than for written portfolio work.

Again referring to points identified in the literature, there may be more scope in some institutions for better links between workplace tasks and skills, employer mentoring and portfolio construction in order to improve student learning and

development. The institution offered as an example above and in appendix 4, responded to open questions by saying that employers and placement students' are encouraged to make use of elements of the portfolio work (for example the training needs and personal development planning) during the mentoring process. However, it is difficult to ensure quality and regularity of mentoring in all placements.

Do portfolios contribute to degree credits?

In only six of fifteen cases (33%) does the portfolio contribute to degree credits. The number of credits gained varies between 54 and 240, but of the six cases, three offer 120 credits (equivalent to a year of study in English universities). Most commonly, successful placement portfolios resulted in a stand alone award (ten of fourteen cases, 71%) such as a Certificate. In a few cases students gain an external professional award or membership as well, such as City and Guilds or CIPD. However, students have to pay to receive the award and not all students take this up.

Finally, seven (54%) of the thirteen units who answered the question said that they are planning to introduce innovative methods of portfolio assessment mainly by migrating to electronic means of assessment. But a number of units stated that in their view, what they already do is innovative. For example:-
Respondent R02 said that what was innovative in their portfolio is that *"it is based on the proven strength of reflective learning logs".*
R04 said what was innovative was "*we have adopted an an interpretivist approach to understanding and assessing student learning*".

In open questions one respondent saw no need to innovate as the placement and portfolio model they had worked well "*we've been doing this for twenty years or more".*

Most of the innovative elements of portfolios mentioned can be transferred into e-portfolio templates, but a question is, whether there is a compelling case for doing so if the current means work well?

Electronic support for portfolio preparation and use of e-portfolios (Questionnaire Section C)

Electronic support for portfolio preparation (QC7)

Nineteen respondents answered this question. Few responding units are using specific e-portfolio software. There is one unit using custom built portfolio software (i.e. built in an institution to meet the institution's own needs) and another is using e-portfolio freeware (as open source, the package is offered free to the user by the owner, but maintenance and upgrades may have costs). No responding unit is using proprietary e–portfolio software (i.e. software bought from a commercial supplier).

VLEs are the most commonly used electronic support – ten (53%) units are using some kind, including Blackboard, WebCT and Moodle. Of the ten respondents who mentioned VLEs the systems used were:- Blackboard (3); WebCT (2); Moodle (2) and two other VLEs, product not specified. Several more respondents referred to Blackboard in the open comments because they were planning to migrate to it in 2008.

Regarding common tools, standard word processing packages are reported as being used by ten (53%) units. This result is difficult to interpret; it may be that if units do not themselves provide students with access to word processing packages, that they have answered no to this question.

Responding to QC8, eleven of seventeen (65%) units stated that they had plans in the next two years to provide electronic support for portfolio preparation. Open comment suggest this refers to Blackboard in a number of cases.

Electronic or paper submission of portfolio work and completed portfolios? (QC11)

Of the twelve units who responded to this question, currently, students are likely to submit their portfolio 'work in progress' as paper products (five, 42%) or to have a choice of electronic or paper submission (five, 42%). Two (17%) of the responding units' students do not submit work in progress. It is not clear in these cases how support for reflective writing takes place, but it may take place in discussion on tutor visits.

Nine (60%) units said students submit their completed portfolio as a paper product, four (27%) can submit by paper or email; one by email only and one through a VLE.

Perceived drawbacks of introducing electronic portfolio building (QC10)

Only one of fourteen respondents strongly agreed that e-portfolios offer additional benefits over p-portfolios and one respondent strongly disagreed. However 50% agree there are additional benefits of e-portfolios and 36% disagree. Therefore at present the case for implementing e-portfolios is not sufficiently made.

85% of the thirteen respondents believe students experience **access** problems using e-portfolios. Chapter 5 casts some light on practical reasons concerned with access in the workplace and in students' accommodation while they are on placement (which may well mean a change of address for many students on the one year placement). There may be problems also with guaranteeing access where students go on several shorter placements each year, in different workplaces or in different departments or sites of the same workplace. However it is interesting that one of the two universities that disagreed that there are

access problems is located in a post 1992 university, places nursing students and is not currently using e-portfolio tools or any electronic tools but has lobbied to get them, at least for placement management, for 2008. The other unit is located in a pre-1992 university, places psychology students and is using WebCT to support portfolio preparation.

Ten of twelve respondents (83%) believe also that students experience **technical** problems using e-portfolios although one respondent strongly disagreed and the other disagreed. The unit which strongly disagreed is located in the post 1992 university described above (which uses no electronic means currently) and places nursing students. The unit which disagreed had access to an e-portfolio system for engineering PDP and placed engineering students, but in open comments stated that not many students used it for placement.

It would be interesting to follow up the two UK units which have current access to electronic tools, especially as one has WebCT and is using it for placement portfolio support, but the other, which has access to an e-portfolio product (for PDP) has little placement student uptake. It would be interesting also to follow up the New Zealand placement unit which has an electronic tool which is neither a VLE nor an e-portfolio, but a rich text editor (a tree structure of electronic information; each branch of the tree can hold information and be commented on by students and tutors, date stamped). The university uses it for support prior to placement and for portfolio support.

Given the other placement units' perceptions concerning access and technical problems, it might seem surprising that so many units are thinking of moving to electronic tools. Open comments suggest that units do not intend to move to specific e-portfolio products, but to migrate to a VLE for communication and provision of links. It seems likely that this is driven by a general roll-out of either a VLE or a PDP system in which they will participate.

As there is a relatively high proportion of units thinking of migrating to electronic support and mindful of the respondent who said that their decision might rest on the outcome of this research, the authors decided to investigate further some examples of choices already made. The following Chapter 5 addresses the use of e-portfolio and VLE environments in three case study universities. Two of these universities – which are using an e-portfolio PDP product - were not respondents to the survey. The sites were chosen because according to the literature (Strivens 2007) they are using the current most popular e-portfolio product across the UK university sector. The third university unit is a respondent to the survey and was selected because they had chosen to implement the most popular VLE according to the same survey. It was a popular choice for the future in responding units.

Chapter 5 provides also a test by returned placement students of the ease of use and added value of a popular example of e-portfolio software.

What do placement units consider to be innovative about their assessment practice?

The table in Appendix 4b present a summary of respondents' comments to open questions about what they believe to be innovative about their methods of portfolio assessment and about their near future intentions to innovate.

Responses to QC16 offer as innovation a variety of aspects, including a skills based assessment, tools for reflective practice; formative and summative assessment, gaining degree credits for the portfolio; gaining professional qualifications; inclusion of employers in assessment, dialogue amongst tutors, students and employers, student led input and career development planning.

The medium – whether paper or electronic, is not mentioned by respondents to QC16. It is the content of practice that is considered to be innovative. However, despite placement units' doubts about access and technical problems (see responses to QC10 above) migration to electronic means is the most frequent response to QC17 which concerns planned innovations. Two respondents mention e-portfolios, several others a VLE – one respondent refers to the VLE as "university driven". Other innovations mentioned are directly connected to the link between content and assessment – changes to the types of placement, changes to the type of portfolio and introduction of credits. One respondent intends to promote portfolio based assessment to other parts of the university.

In terms of portfolio content, the product of most of what is happening or planned to happen could be uploaded electronically. For some of the student tasks referred to in the comments the process could be completed electronically perhaps using template tools. But there are three points from the literature which should be addressed before doing so:-

1. What is the compelling reason?
2. It is necessary to be clear how much it is reflection or its products or its medium that contributes to learning and/or achievement.
3. It is necessary to be clear which elements in 2, above, are being assessed.

Monitoring and evaluation of the added value of placement, portfolios and assessment

One factor to take into account for future research on the added value of placement or portfolios or their assessment is the limited availability of evidence at the level of placement units. Only about one third of units had reports on the impact of portfolios or placement more generally on **degree performance** (five, 33%). Evidence is simpler to establish for the third of respondents where placement is voluntary, when outcomes can be standardised for tariff points on entry and compared.

Only three (20%) units have reports on the impact of placement more generally, or **employability**. However first destination surveys can provide this information by institution.

Similarly, only three (20%) units have reports of the impact of portfolios or placement more generally on the **student learning experience**. No unit has a report on the impact of **portfolio assessment** on the student learning experience or on the impact of **e-portfolios** on student learning experience. There are likely to be student feedback surveys which could help to provide evidence; but other robust tools to identify learning development may be quite complicated for units to implement.

Commentary: The implications of the survey results for the implementation of e-portfolios

IT and placement unit functions generally

Placement units are multidimensional in their functions. They register and keep student records for pre-placement and placement students; they provide personal and documentary support and information; they advertise jobs, liaise with students, tutors and employers, manage the placement process and often the assessment arrangements. Many of them are also directly engaged in pre-placement training provision, module provision, placement student supervision, document development and driving innovation, whether in electronic tools or in models of portfolio content and assessment. Their role is complex and more than administrative and despite usually being small teams, they risk proliferating software packages to deal with their differing functions.

There are at least four different placement unit functions, each of which may be served by paper or electronic methods. These are:

1. Record keeping regarding placement searchers and students on placement.
2. Advertising placement jobs to placement searchers.
3. General communications with placement searchers and placed students, tutors and employers.
4. Specific portfolio building packages for use by students and accessible by tutors and perhaps employers.

Regarding function 1, IT support for record keeping was not considered in this research. However it should be noted that while some placement units keep placement records as paper copies, IT products are commonly used, including bespoke commercial software. An example is the Pinesoft database, which is a longstanding and stable product technically supported by the provider company for an annual fee. However, even in the same university, it can be the case that while one unit is using IT to keep records, another is keeping paper records.

Regarding function 2, advertising placement job opportunities, some universities use bespoke commercial or custom built data base software, for example a password controlled intranet site open only to students registered to seek a placement. One useful feature that can be part of an electronic product is the ability to track student applications activity. Job applications are increasingly available on-line only and therefore in a paper based system placement staff may have to go to considerable efforts to monitor student placement search activity. However, universities are resistant to supporting bespoke software for specific small units and some universities are using or planning to use Blackboard for job advertisements and search resources.

Functions 3 and 4 were a focus of this study and are discussed below.

Three quarters of respondents said they are planning to provide electronic support for portfolio preparation, but their current usage is very limited. It may be that the research has taken place on the cusp of a change and that research carried out in 2009 rather than 2007 would illustrate a migration to electronic support.

For function 3, general communications, placement units are likely to use email outside or within a VLE. Moodle was designed at one of the responding universities; it is an open source software with a similar function to WebCT and Blackboard. It seems that placement units are using VLE software as and when it is rolled out across their universities but they are not the first users and their needs are not often explicitly considered. None of the respondents specifically suggested that they were using or were planning to use the bespoke Blackboard e-portfolio module. Therefore it seems likely that virtual learning environments such as WebCT/Blackboard are being used currently only for general communications and for providing electronic resources and links.

In terms of innovative methods of assessment, Function 4, placement portfolio building packages, is the main focus of this study. As indicated earlier, no respondents said they are using proprietary e-portfolio software, one respondent said they are using e-portfolio freeware and one respondent said they are using custom-built e-portfolio software. However, neither of these is bespoke e-portfolio software designed for building placement portfolios in a variety of disciplines: one respondent is using RAPID - a custom built PDP package designed by the responding University (Loughborough) specifically for construction and engineering students. One of the two New Zealand university respondents is using Challenge Frap (designed at Massey University) a tree structure described earlier and known as a rich text editor. It does not appear to support the full range of features present in custom built e-portfolio software.

One further respondent plans to introduce PebblePAD in 2008. PebblePAD was designed at Wolverhampton University. It is specifically designed for portfolio building, but not specifically for placement portfolios. However, it is an ‘open’

package that supports all the generic elements of portfolio content that were reported on by respondents to the survey.

Therefore, no respondents reported that they are currently using a package specifically designed for building placement portfolios. The survey specifically asked about Profile (developed by the University of the West of England) because it appears to be the only package specifically designed to include on-line forms to support placement (but it can be used for wider purposes), but no respondent to the survey reported using it although one respondent is considering it.

No respondents reported using any other packages, either proprietary (such as PebblePAD) or freeware, such as PDSystem or Petal or ePET, though all are in use in UK universities.

Possible barriers to take up of e-portfolio packages

Lack of external or institutional driver

About three fifths of respondents to the survey were units placing from business or business related courses and many others were placing students from computer science and engineering – often placed by the same unit as for business students. For these areas of undergraduate study there is no national requirement to have a portfolio or one of any particular sort and there is no national guidance as opposed to exhortation regarding use of electronic support in placement, nor finance other than for pilot projects. Therefore there is no external driver for implementation.

For nine of the fifteen respondents to QC12, the sandwich placement does not provide ‘credits’ towards the student’s degree. This may mean also that the institution invests fewer resources in placement in areas such as business, which may slow innovation.

Lack of a common institutional environment for placement units in the same university

It does not appear that there is a centralised placement function in most universities. In the responding institutions there is not one central work based learning unit, but several discipline based units. One consequence of having several placement units in each university is that awareness in placement units about the placement activities in other faculties/ schools/ divisions is not high. Not all respondents were able confidently to list all the areas in their university that offered placements.

Further, in some of the responding placement units that were not using e-portfolios, the authors are aware (from the literature review and contact with universities in the course of this study) that e-portfolio packages were in use in

their own universities. In at least two of the respondents' universities PebblePAD is in use. There may well be practical issues behind this result. The most obvious is that some packages do not support all the functionality some placement units require or that the PDP e-portfolio system is optional for students and has limited take up.

Finally, where there are a number of unconnected placement units in the same university, there is likely to be a slower rate of innovation both because of slower spread of information and practice, but also because there are no economies of scale to spread the fixed costs of implementation and maintenance.

However, there are strong reasons for not having a central unit. For example, the number, duration and nature of placements is quite similar in business and computer science and engineering (usually once, for one sandwich year) but there are commonly several shorter placements each year in nursing and education and a much stronger focus on supervised clinical or education placement practice. There has to be staff competence in undertaking such matters as Criminal Records Bureau checks. It is unlikely that a single unit would have the capacity to deal with the diversity of requirements.

In art and design and architecture and the built environment, the student work produced is likely to be in a very different form from either business or nursing. E-portfolios may have the capacity to deal with audio/ video/ images of student work but the three respondents from units which placed students from creative disciplines, including those from creative technology, music technology and music and dance, were not using e-portfolio packages. They may be too constraining of the work.

Lack of close integration of academic developments and placement unit activity and staff training

It may be that in some institutions placement units are not well linked to academic and consequently pedagogic developments. Some units, in addition to academic visiting tutors, have a member of academic staff integrated into the placement unit team to ensure a close link and feedback between service development and academic developments. However this is not the case in many units, where beyond academic visiting tutors, there may be no academic liaison at all or there may be academics who are not integrated into the team. There are examples of universities that do not use their own academic staff as visiting tutors, but have outsourced the function to private suppliers.

Training and support opportunities for staff

E-portfolio packages designed more broadly for PDP have functionality for placement portfolio building though specific forms may have to be created. But it may be that implementation of PDP packages in some universities has not envisioned or included placement units and it may be that placement unit staff –

especially administrative staff – lack opportunities for training in the packages or technical support for maintenance and upgrade.

Further, as the comments below suggest, the survey seems to have taken place at a point at which a number of responding placement units were only just becoming aware of options regarding electronic support and specifically e-portfolios and were just beginning to investigate their options. For example

R02:…*Not formalised – may depend on your research!*
R04:…*Will continue to review what is available and affordable (freeware is pretty good currently)*
R09: *Blackboard – and possibly e-portfolio software… Have experienced using Weblogs and feel this might be used in the next 2 years to assist in placement support. Also might consider the use of facebook – but in a formal way.*
R12: *Blackboard - and I would like to trial the Ulster system*
R14: *PebblePAD*
R20:..*Use of Blackboard*

It seems to the authors that there has been organic growth in PDP/ e-portfolio packages to meet specific institutional needs. At the same time there has been widespread implementation of larger VLE environments but without a clear intention to support placement unit activities in either case.

Without clear, simple easily accessible product information on functionality, cost, maintenance and upgrade and user friendliness, plus good quality training for placement staff, students and also tutor and employer users, placement units will resist exploiting the potential benefits of e-portfolios for student learning and graduate employability. Simple guidelines and a ‘checklist’ to help staff make decisions would greatly assist opportunities to implement e-portfolios.

Lack of financial resources

In universities with some devolved decision-making and budget responsibilities, different faculties and schools may make different decisions regarding support. Each unit would have to be aware and convince its own faculty/ school of its needs, but without perhaps access to the best information about university or faculty strategy and developments, thus slowing down adoption of developments in IT.

Whether decentralised or not, in many universities decisions are likely to have been made that central services will not support packages designed specifically for small units, which may otherwise proliferate, with consequent training and maintenance increases for the university. Without their own budgets to buy in packages and pay for maintenance, placement units themselves will find it difficult to migrate to any electronic package of their choice.

In these circumstances, units seeking to provide electronic support for placement and placement portfolio building may be best served by trying to get their needs supported by university wide supported systems with some functionality for portfolio building.

Given the costs in buying and maintaining e-portfolios and getting acceptance from staff, tutors, students – and employers – e-portfolios need to add value to a significant extent compared to paper methods. In particular, given the literature on the learning objectives of work placement which go beyond documenting competence, e-portfolios need to contain usable reflective and assessment tools, accessible to all users, including students off-campus and employers. They must also meet the requirements of the Disability Discrimination Act. Providing a more attractive ‘look’ or ‘feel’ or a more complete/ permanent record than a paper product are not in themselves likely to justify the significant investment cost, not only capital, but in terms of training and most particularly, on-going support and upgrades.

Chapter 5: Choosing and using e-portfolio packages

Summary

The survey demonstrated that many universities, while not actively using e-portfolios, were interested in exploring using them. Six respondents were either using WebCT (3) or Blackboard (3) already to support portfolio development, with a further four using some other VLE. None reported using proprietary e-portfolio systems. One was using a custom built e-portfolio system but stated that while it was available to all students, few used it in practice. Eleven respondents were planning to implement further electronic support for portfolios including six who were already using some form of electronic support including Blackboard, WebCT and freeware e-portfolio software). The most common response to further development was employment of Blackboard, WebCT or some other VLE.

The interviews with staff at three universities demonstrated diverse solutions to developing electronic support for portfolio building. The university that implemented its own system was satisfied with the outcome for PDP and considered the investment in development worthwhile, and considered the system now stable. The university that purchased an e-portfolio system for PDP also considered the implementation successful, met their needs and was stable. In both cases the systems were available to all students, but it was not compulsory to use it, and in particular the portfolio development was devolved to faculties, schools or programmes. In neither case was the e-portfolio purchased for specific use by work placement students - either for pre-placement support or to build placement portfolios while remote from the university.

The third university preferred the more limited functionality of a VLE, as the functions missing from the VLE such as development of multiple portfolios was not considered important compared to the advantages. Blackboard is already in place, can be used for pre-placement as well as placement and there is little additional training of staff or students or cost of support or technical staff.

Regarding the focus group of student testers, students who had been introduced to an e-portfolio package had no problem using it, even on first acquaintance. The interface was similar enough to other systems they had experience of to give no difficulty. However they did not value its additional functionality, and preferred to use existing common tools to develop their portfolios. This was especially important as students on placement are preparing their portfolio remote from the university in many different work and living environments.

We question the hard distinction between p-portfolios and e-portfolios. They may be merely different moments of the same product and process. It appears that at least some employers and students want a paper copy of the portfolio, however it

is produced. Further, paper portfolios are invariably produced electronically and then printed off. Some institutions will implement portfolio development using VLEs and common tools while others will employ dedicated e-portfolio packages. There are advantages to both approaches. With the former no additional package has to be purchased or learned and the students' individual portfolios are easily transferred to other environments. The e-portfolio systems have tools that aid the student to produce their portfolio, and to produce various versions to suit different clients.

An e-portfolio solution for placement is more financially and practically viable if it is introduced across the university for broader purposes, for example PDP, so that there are no additional learning or financial costs for staff and students from a package specifically introduced for placement. A central unit can provide support, documentation and maintain the system.

Developing an in-house e-portfolio system has a cost in terms of programming staff needed to produce and maintain it, though if properly designed it should address the specific needs of the institution. Taking open source packages is potentially cheaper in terms of development, but maintenance and support will need to be resourced. Buying in a commercial package is the most simple and may be cheaper once staffing resources are taken into account.

Both universities A and B have as a policy introduced a university-wide PDP e-portfolio system, but made it voluntary. The large uptake of both systems indicates that tutors and staff do value the systems. However in both universities it is not much used for work placement and some areas prefer to use common tools. Nursing schools, with their need to get sign-off of many clinical mentors in different work environments (some of which may not have ready access to the internet), seem to prefer paper portfolios, although electronic support for these is valuable.

It seems clear that the institutional context will drive the decision on how to implement e-portfolio functionality and its uptake. But it appears that up till now, there has not been much consideration of the specific needs of placement either for pre-placement training or for portfolio building while on placement. Crucially, any e-portfolio package will need to deal with remote access, remote professional environments and assessment or other contributions by external users.

Introduction to the chapter

This chapter presents

1. The results of a review of some VLE and e-portfolio packages, interrogated according to ten questions arising from the literature review and the concerns raised by respondents to the survey presented in the

previous chapter. *The review of systems and packages is presented in Appendix 5.*

2. The results of three interviews with university staff who have taken different approaches to the implementation of e-portfolio support for students. In two cases the implementation concerned support for PDP (but the package could be used for work placement specifically or for continuing professional development). In the third case the decision concerned electronic support specifically for placement.
3. The results of a focus group of six business studies students who tried using an e-portfolio package and then discussed it in a facilitated group. The students had returned from placement during which they had completed p-portfolios. The aim was to test for ease of use by students new to e-portfolio packages and to get their perceptions of the potential added value compared to p-portfolios.

Results of the review of some systems and packages that can provide e-portfolio support for students

There is a potentially bewildering array of products with currently no obvious market leader. There are several different types of package that can be used for placement portfolio building:-

- E-portfolio packages designed specifically for placement portfolio building.
- PDP packages that are designed as e-portfolios. Some include other functions, for example placement management.
- VLEs, which have some functionality for portfolio building, and which also have additional optional e-portfolios components.
- Other packages that have been used to support e-portfolio production but which make no claim to be e-portfolios.

Some of the packages are used by many universities, for example e-portfolio systems such as PebblePAD, ePET and Profile. The former two were designed for PDP more generally, the latter for placement specifically including placement management and portfolio building. No survey respondent was using any of these packages. While all can be used generically, ePET is used largely in health schools. RAPID is used widely but mostly in engineering schools.

VLEs such as Blackboard and Moodle are used very widely, but additionally some universities have at least the capability to use e-portfolio extensions to the VLE (Blackboard content and Mahara). None of the survey respondents stated they were using either of these extensions.

A check list was employed to determine if the products could address specific needs of placement students, such as external access for placement employers. Most items could be dealt with adequately by e-portfolios and VLEs.

Thus in a university with a VLE, a placement unit has no pressing need to adopt an e-portfolio package to migrate to electronic means to support either pre-placement training or to support placement portfolio building.

However if PDP has been implemented centrally for all students in a university, using an e-portfolio package, then it may be useful for placement units to take advantage of the additional capabilities that these systems allow. Generation of webfolios (e.g.) and creation of different e-portfolios for different audiences would be added value outputs that these systems could deliver. If staff and students have 'bought in' to a PDP/e-portfolio system and are comfortable using it, then there is minimal additional training or support resource needed for students and tutors. However, in some universities/ faculties students do not have offsite access to network drives where they may have stored information they need for their portfolio. Therefore would have to carry everything they needed on a memory stick for example. Employers also would need to find it simple to submit appraisals or other materials without having to invest in knowing the PDP e-portfolio product.

Results of three case studies on implementation of e-portfolio support for student PDP and work placement

Staff in three universities (two in the Midlands of England, one in Northern Ireland), were interviewed about their choice and implementation of e-portfolio support for student activity. The sites were chosen because the decisions involved implementation of the most popular (by number of universities purchasing) e-portfolio and one other popular e-portfolio and the most popular VLE.

The cases presented here are not intended to offer an assessment of any product but to look at how staff took decisions about what to implement.

University A

At university A various options had been considered to provide e-portfolio support for PDP and associated activities. Options they considered included LUSID, ePET, RAPID, a VLE and Blackboard vista (a version of Blackboard with additional capabilities). These were all excluded on various grounds. LUSID needed a programmer to make any changes, which would make it less flexible, more time consuming to adapt and it has a staffing resource aspect. ePET and RAPID were originally designed respectively for medicine and engineering, and it was felt these would not be suitable for all students at university A. The VLE option was rejected because it is module focused and university A wanted to give access across the whole student programme so that the students take their portfolio with them through all modules. Furthermore the team at A felt the focus on modules rather than individual students was inappropriate. At the time there

were no wikis or blogs on the VLEs considered and the team thought the VLE interfaces looked dated.

The team at University A decided to implement PebblePad as it was “open” i.e. no content came with it, and it could be adapted to PDP for any discipline. PebblePad was implemented using a single sign-on via a portal so that students could access other systems such as the WebCT VLE that is used to provide module resources. All students are required to undertake a portfolio, though implementation of PDP is devolved to individual schools, and in one faculty this means 800 students in one cohort take a common module. PebblePad is not mandatory for implementing PDP, but in their second year students create an e-portfolio which is assessed. The assessment is an online application form which is delivered through PebblePad.

University A are now in their second year of using PebblePad. Their experience is that it is stable and the support is very good from the company (PebbleLearn). It has only one person maintaining it, who has other duties also. The cost (about £20,000) is cheaper than the cost of giving hard copy files to programmes of students that used to be needed. Some staff in University A were reported to be anxious about the implementation, especially during a period of other institutional change. Because of this the staff have access to workshops and there is a “flying squad” (mostly postgraduate students) who provide support.

University A said they are generally happy with the implementation of their e-portfolio solution. However it is not much used in work based learning, and currently there is no employer access policy (though PebblePad has the capacity to share user documents with external users).

It would be useful to follow up University A concerning the nature of the assessment and support for preparation of the content rather than for use of the technology.

University B

At university B a decision was made to develop a bespoke product which would address PDP generally and specifically provide e-portfolio support.

A team at University B developed the PDSystem (Personal Development System) and continue to maintain and further develop it. University B was not interested in marketing or selling their product, but preferred to give access to it freely under the open source licence. This decision was made partly as the developers did not have the expertise or interest in the business model that would be required, but also to gain the benefits of development from other partners.

In the PDSystem about 25% of the product is devoted to assembling the e-portfolio, the remaining 75% to gathering material for the e-portfolio, for example

skills audits, CV generation, recording of skills etc. i.e. most of the system is for creating the components, and the remainder consists of tools to combine these into a portfolio. Students may have several e-portfolios. E-portfolios are subsets of available data. An individual (employer say) can provide feedback and students can add notes to help develop the portfolio.

The PDSytem in use was 3.1 but a version 4 is being beta tested (i.e. pilot-tested by users). All students at University B have access to PDSystem and 16,000 of the 24,000 are active users. As in university A, faculties and schools decide how to implement PDP. They are not required to use any e-portfolio product, including PDSystem. In particular nursing does not use PDSystem but use their own paper based portfolio because of the requirement to address specific professional criteria.

There is a specific placement management system, which is integrated within PDSystem. A student may be accessing both systems without even being aware they are moving from one system to another. University B report the system is a success. However at the time of the research, the authors were not able to access the placement management system.

University C

University C made the decision to use their VLE (Blackboard) to implement e-portfolios specifically for work placement. Currently, there is a centrally provided electronic PDP product but it has student record keeping (on achievements) and student comment (called reflection) boxes and a ‘sign off’ box for tutors but it does not have e-portfolio functionality and there are no tools to support reflection. However, a central decision may be made to purchase e-portfolio software; packages are being investigated currently by technical services. Independently two schools (Business and Nursing & Midwifery) explored how to implement e-portfolios in Blackboard.

In business, the placement students currently have a paper portfolio, though this is available electronically. The placement manager considered e-portfolios and attended a training course for PebblePad. While the interface was attractive and easy to use, it was considered that there were no compelling reasons to use it as an e-portfolio specifically for work placement given the costs of the placement unit ‘going it alone’. The main perceived need was to provide supporting documentation for portfolio preparation, allow templates to be accessed and provide feedback to students both formatively on portfolios in preparation and summatively, on final submission of portfolios. All these functions can be implemented in Blackboard, which is already available and supported centrally.

However there is a practical problem for implementation in that Blackboard organises material by module and staff wished to use the same software to manage pre-placement as well as placement students. Prior to placement, during the registration year (level 1) and the search and preparation year (level 2)

students need access to materials for marketing and registration of placement, job search and application support and pre-placement training. They could be from a variety of programmes. The solution decided upon was to use the Blackboard Community function to support pre-placement students.

For the placement year itself, students can be enrolled onto a Placement module in Blackboard and they can download the materials needed to develop their portfolio and can use the email facility in Blackboard to send to tutors or placement mentors work in progress or final assignments. They can submit their written portfolio work through Turnitin to control for plagiarism. External users such as employers can be given limited access to the site either as tutors (providing there is an education function – this is the university requirement for enrolling personnel at instructor level) or even more limited access as 'students'.

Portfolios in nursing require several competencies to be signed off. It is most practical to use a paper portfolio to collect the signatures. Materials for the portfolio are stored on Blackboard and may be downloaded, edited in common tools such as word, and printed off. Blackboard is used to store templates and supporting documentation. Unlike the business school a Blackboard Community is not employed.

In the cases above it is evident that there is more than one solution to getting e-portfolio type functionality to support placement portfolio building and placement management. It is evident also that decisions have been carefully considered but it is clear also that placement needs have rarely been considered explicitly by central decision-makers for IT. It is clear also that central support is essential to encourage uptake of e-portfolios, due to the costs of buying, maintaining and training on the system. It is unlikely that there would be staff and student 'buy-in' to a package being used only for placement. There are as well some issues about employer access and remote access to network drives.

The right decision on uptake of electronic support for placement portfolio building will differ depending on the institutional environment, the pedagogical concerns of the placement unit and the usability and added value as perceived by students.

The results of a student test of an e-portfolio product

A popular PDP e-portfolio package currently in use in some HE institutions was given to a group of six business students from a variety of areas (marketing, accounts, human resources e.g.). They had recently completed placements in business and had constructed paper portfolios. It should be noted that these students' faculty was not using e-portfolios for PDP and therefore they had no previous experience of an e-portfolio product in a university setting.

The aim of the focus group test and discussion was not to test the product against any other product, but to examine whether new users who were experienced in placement p-portfolio building would find added value in an e-portfolio product.

Following a training session, the students had no problem using the package, although it was their first introduction to it. The students then returned after one week to discuss their experience, with facilitators. Despite enjoying using the program they did not see significant additional benefits of using it to build their portfolios. Five of the six said they would not use an e-portfolio package and would prefer to use common tools with which they are familiar. They felt they would have greater control over (say) Word or PowerPoint to produce a portfolio with the appearance that they thought appropriate.

These returned placement students preferred tutors to decide what materials to put on a system or package to provide support for placement search and portfolio building. They were satisfied also with a prescriptive approach to the areas that their portfolio must include, but with the freedom within that to choose their own examples of work, reflection on tasks and skills, development plan and organisation reports, personalised to their placement. But they preferred to prepare these in Word rather than in a template, as they had more facility with Word and it was not necessary to access the internet when preparing documents.

The students' identified their main concerns about using e-portfolio packages. First, access to an e-portfolio might be difficult for a variety of reasons. Access to the Internet may not always be possible. The interface of the e-portfolio system they saw was fun to use, but might be viewed as frivolous by employers. The social networking function of e-portfolios was not seen as useful for two reasons, firstly that employers might view it as time-wasting if it was perceived that it might be used in work time, and secondly that all six students were already using social networking systems like Facebook, and did not see the utility of using another one.

Some students felt that their managers in placement might choose to look at their e-portfolios, but some would want only to look at hard copy, which might be easier and quicker for them. Employers often had their own templates and formats and a specific e-portfolio probably would not suit their requirements.

Of the six, only one student was positive about using the e-portfolio in practice, and this student was working in a software company.

Finally, regarding support for overseas placements (a concern in the QAA code as reported in Chapter 2) opportunities to get access to the internet both in and outside the workplace may vary. However where internet access is possible any system or package with links may assist students in accessing text in their

preferred language. The reflective tools in an e-portfolio package may be important also to support student reflection in the absence of any tutor visits, or where one only can be made. However, there may be more 'buy-in' issues in employer investment in the content and medium of the portfolio.

These results are from a small focus group of post placement students, but there views are nevertheless useful because they understand both the content and context for placement portfolios. It is clear that the key factors for them are access off-campus, liaison with employers and the use of e-portfolios in the professional environment of the workplace – some students are given work time by their employers to assist them to complete portfolio work. Facility with the technology is not an issue, even for students with no previous experience of e-portfolios. Added value over p-portfolios for the portfolio content and context was the deciding factor in their decision about whether or not to use it.

Can a VLE function support e-portfolio building?

From the survey it is evident that many placement units are planning to use a VLE to support placement portfolio development. It is timely therefore to consider whether it is a viable option to employ a VLE such as a commercial product (e.g. Blackboard, WebCT) or open source (e.g. Moodle) instead of using a dedicated e-portfolio package. There are advantages in using a VLE for this purpose as:-

- Universities are already using VLEs for module teaching and learning provision.
- They are stable and supported products.
- Students and tutors are familiar with them.

In Butler's review (Butler, 2006) she concluded that an e-portfolio needs to address various technical and practical issues. A measure of whether a VLE can act as an e-portfolio therefore could be, does it address Butler's criteria? Below we assess whether Blackboard can deal with these; but as many VLEs such as Moodle are functionally similar, the results should be generalisable to many other common VLEs. While Blackboard offers an e-portfolio module as an optional purchase, here we are looking at the basic Blackboard system and its ability to address the criteria without purchasing additional packages.

Butler's criteria

A way of organising content

Blackboard typically arranges materials into modules. Students out on placement can be registered to a placement module and all relevant materials including forms, templates and support documents and links can be accessed through the module. This is simpler for the typical sandwich year placement than for a series of short placements.

Pre-placement (and post placement) students' needs, can be addressed by having a different structure which is called a Community. A Community may for example be a faculty, with all the materials (forms, policies etc.) to which a student in a faculty may want access. A placement Community can provide pre-placement students eligible for placement with relevant information and communications. However, a decision will have to be made about how the Community is populated with students who may come from various programmes within a faculty.

A way of tracking student progress

There are several methods. Tutors can get reports of access of pages, bulletin boards etc by student and by date.

Marks can be entered by tutors manually or generated automatically in the case of quizzes such as multiple choice question quizzes. The marks are entered into a database that can be accessed by tutors to give a profile across students or of an individual student.

A way of archiving and storing large amounts of data

Blackboard can archive all content on a module or Community basis. Archived material can be accessed at a later date.

A way of retrieving data

Students can download files loaded into folders by tutors. All live data can be accessed immediately, and archive data can be accessed by request. Students can send files via email as attachments and also to a bulletin board for more general access. All users of a module or Community are able to be located within Blackboard so a student needs only the name of the user to be able to communicate with them. The Blackboard system sends email to external email addresses so the user does not need to access the Blackboard system. Students can be put into collaborative groups who may share data.

How reflective pieces will be linked to artefacts?

There is no specific way that the general Blackboard product addresses this and choosers may wish to consider the specific Blackboard portfolio product. However, given the focus group students' preference for using common tools, it may be preferable merely to upload documents such as Word files with links to other documents or files. A Word document could thus have a link to (e.g.) an image or video clip. Blackboard supports wikis (to create, edit and link pages together for collaborative websites) and blogs (website where entries are usually in reverse chronological order, often used for commentary or on-line diaries). These can be used as reflective pieces and/or diaries and may themselves be linked to other resources.

How assessment results will be incorporated into the electronic portfolio?

If marks are awarded typically these would be linked to a module, as universities do not in general award marks other than by module. Thus a module in Blackboard (for example a placement module) would have marks entered into it by tutors, who could be external also (say placement supervisors or employers).

A way of publishing the portfolio, so a variety of versions can be produced for different audiences

There is no facility for automatically generating different portfolios for different audiences. Students would need to use word (e.g.) to create tailored portfolios. However, this was the preference of the focus group of students.

How flexibility of the organisation of data will be ensured?

Blackboard uses folders into which files may be placed. Thus it employs the same system as most operating systems to organize data at the level of files. Further flexibility can only be achieved using (e.g.) common tools.

Which coding language will be used?

Blackboard users or course designers need to use no code. Building courses is achieved using Blackboard 'control panel' which contains a set of tools to guide the course builder.

Which technical standards need to be met so the system will communicate reliably with other systems?

Blackboard is a web based tool and can be used with other web based materials. For example links to web resources can be inserted into documents (including Word documents and files created using other common tools) and one can specifically add links to web resources to menus. Blackboard can be set up to either link to web resources in another window or in the current window.

Which file formats will be recognised by the system?

There is no Blackboard restriction on what files can be uploaded, though the student will need the relevant software on their computer to read the files. If one sticks to common tool file formats such as Microsoft Office or those the student would be expected to have, then this is not a restriction.

How security and access permissions will be set?

Blackboard allows six levels of access, Course Builder, Teaching Assistant, Grader, Instructor, Student and Guest. Course builder can add, remove and edit all materials. Other levels can be given varying access under the control of the Course Builder. For example discussion boards can be set such that the student can post anonymously or only as a named person, can remove their own posting or not etc.

How scalability will be ensured so that a large volume of users can access the system?

Blackboard is designed to run campus wide with thousands of students.

How the system will ensure maximum accessibility and usability for users of all levels of skill?

Blackboard requires students to be able to navigate a web based system. This is a minimal requirement and all students should be able to do it.

The inclusion of a wizard tool?

(A wizard is like a macro – it makes complex tasks simple - someone else has worked out how; you just use the result to do what you want to do). All courses are built using tools. No coding is needed.

What kinds of technical support will be available for users?

Typically universities have central support for installation and maintenance, and devolved student support to faculties or schools. Blackboard maintains the releases of the package and provides support as part of the contractual arrangements with customers (universities). There are technical and user manuals for Blackboard available on the Blackboard website.

How the privacy and intellectual property of users will be protected?

Material is password protected but the course builder can view anything.

How long an electronic portfolio will exist in the system: indefinitely, or for an agreed upon length of time after a student graduates; and how portability will be ensured, so that students can take their electronic portfolio to another institution or choose to maintain it on their own?

This is up to the university. There is no technical reason why alumni could not be given access. If materials are built using common tools then the student is not restricted to using them within a given system.

Blackboard as a means of providing electronic support for placement portfolios

Blackboard is designed as a virtual learning environment which can be used for module management and support. There are some specific e-portfolio functions that Blackboard (or the typical VLE) does not address, but it does have many of the functions that an e-portfolio could need, and arguably all the student might want. First we will consider what a VLE such as Blackboard can support. Blackboard allows materials to be uploaded onto a secure password protected website. The student can access materials which could include documents, forms, guidance on creating portfolios, exemplar portfolios, and skeleton

portfolios for completion. The format of portfolio materials is entirely at the discretion or the student, and could include PowerPoint presentations, Word documents, images, videos etc. Access could be via assessed modules (for example a placement module with assignments) or via Communities that are not linked to specific modules and could follow the student throughout their studies and potentially beyond as alumni. Tracking of students both in terms of activity and assessment is supported. Data can be archived.

Using common tools students can create documents with links to other files (images e.g.) and all files types are allowed.

Using an industry standard VLE such as Blackboard (or equivalently a commonly used open source product) offers support and maintenance. For the student it requires little technical expertise over and above using the web; training on the package is needed only (not coding) for the Course Builder.

One aspect of an e-portfolio that a VLE like Blackboard does not support is creation of different portfolios for different viewers. So if a student wanted to create a portfolio for an employer and another for an assignment there is no automated method within Blackboard. In an e-portfolio there could be different ‘assets’ such as goals, skills etc. that could be organised in different ways to achieve tailored portfolios. However this could be achieved with cutting and pasting from one word document to another, or by creating several files with relevant materials that could be inserted in different combinations in common tools. The main distinction between packages specifically designed to create e-portfolios and common tools may be this ability to create different views of the same data. It is also the case that e-portfolios may allow different ‘look and feel’ to be quickly created for different purposes.

Discussion with students in the focus group showed however that they prefer to create their own design using common tools to which they have access and with which they have expertise. They did not greatly value the ability of an e-portfolio package to generate portfolios. They perceived it was not worth the extra effort to learn how to get the e-portfolio package to generate a portfolio in a form with which they would be happy. They stated that they preferred to use common tools. They were also clear that they liked a hard copy of their portfolio and did not want a portfolio unless it was capable of generating a single hard copy file. Specifically, generation of online portfolios was not seen as valuable and they considered potential readers of their portfolio would want either a hard copy or an emailed version. Either could be achieved by common tools, and uploading of a portfolio onto a website was also seen as achievable without the need for an e-portfolio package. The social networking function was possible using systems like Facebook (one survey respondent stated they were considering using Facebook for portfolio development), and students could use similar systems to promote themselves using portfolios distributed online.

The practical distinction for the portfolio viewer or assessor between p-portfolio and e-portfolio is not obvious. A student working on a portfolio designed to be printed out as hard copy will nonetheless have an electronic version, and this may be transmitted electronically and may be placed on a website. The fact the student uses common tools to create the e-portfolio is not necessarily a disadvantage but the reverse, since they can take the materials with them and use them after their degree regardless of the university policy on access to systems.

Chapter 6: Conclusions and recommendations on the added value of e-portfolios for innovative assessment of placement

Summary

In summary we believe there is no obviously best portfolio medium, but it is probably not the critical issue. The distinction between paper and e-portfolios we would argue is anyway debatable, since the p-portfolio is generated electronically and the e-portfolio needs to give paper output in practice. Matching content, content tools, assessment types and assessment tools with objectives and human resources, is what is crucial to effective placement learning.

It is the message and not the medium that is most important. It is more important to have a portfolio with the right content and an appropriate assessment and feedback strategy, than to implement a high-tech solution to delivery. Having said that there are robust, stable and well tried PDP/e-portfolio systems and they can offer additional advantages. The resources needed to implement and support such packages are not those that a placement unit should deliver, and they should only be considered as institutional responsibilities.

Conclusions

Most placement units employ portfolios to assess students. They are an appropriate tool for dealing with the complexity of assessment arising from the documentation of learning and achievement in a workplace environment; and also the application of reflection to experience leading to meta-cognition and the capacity for learning outside the classroom and lifelong.

Pedagogic issues

Regarding portfolio objectives and content, there are issues about whether:-

- The content of portfolios is appropriately mapped onto the purpose, audiences and anticipated learning outcomes from portfolio construction.
- One portfolio can address the different objectives that often underlie the portfolio structure and content.
- Different disciplines value the various objectives differently and whether any discipline currently provides adequate support to achieve reflective practice.
- Academic tutors and employers as well as students are adequately prepared to support portfolio construction and assessment.

Regarding assessment, there are issues about:-

- What is being assessed – placement professional performance, reflective writing about placement, the portfolio product or other.
- How and when portfolio work is assessed and what is the role of diagnostic, formative and summative assessment and for which portfolio objectives.

These pedagogic issues remain regardless of the portfolio medium, paper or electronic. We have said also that p-portfolios and e-portfolios may be different moments of the same process and product.

Innovation in pre-placement training and assessment

We have found some innovation in placement preparation including support for students to behave appropriately in professional practice. We have found that many respondents believe reflective practice is itself an innovative tool for learning, but it may not be well supported everywhere. We have found innovation in assessment in responding to student preferences to have employers mark competency in the role on a range of key skills while tutors mark reflective writing about the placement experience and its role in their career development and final year studies. We have found respondents also believe gaining credits for portfolio is innovative, but some placement units do not accept that it is appropriate for experiential learning and its assessment.

There is nothing technical to prevent the content and assessment of most portfolio models being delivered by e-portfolio or other electronic methods.

P-portfolios versus e-portfolios?

Currently survey respondents are mostly using p-portfolios though they are created using electronic means, currently common tools such as Microsoft Office. Thus while the portfolio is considered a paper product, it can and does exist electronically. It is often delivered electronically by email.

UK universities have VLEs to deliver course material, and documents to support placement activity could be lodged on a VLE. Students could deliver material for formative and summative assessment to tutors (including external assessors such as placement employers) using a VLE.

So common tools can be (and are) employed to create a portfolio and this can be in electronic form. VLEs can provide all the functionality that placement staff and students on placement seem to want. Thus there is no pressing need to implement an e-portfolio system.

Potential advantages of e-portfolios

E-portfolios, whether built in VLEs or using specific e-portfolio packages, have potential advantages over p-portfolios for some disciplines in the richness of artefacts, but also in the timeliness of feedback and the scope for collaborative learning. Timeliness of feedback and opportunities for feedback from employers

are a recommendation of the QAA code discussed in Chapter 2. However, timeliness of feedback is an issue that requires management and it is capable of being addressed by any electronic means such as e-mail. Therefore it is not a particular advantage of e-portfolios.

The links are an advantage also in range of materials, ease of access to them and the richness of the resulting student portfolio; but not all students are convinced of the added value to them while portfolio building of what might be termed ‘hypertext learning style’.

Specific e-portfolio packages have additional advantages in providing template tools that may encourage a better achieved output – for example an eight step CV builder plus a final step that allows one to reorder it. There are tools and template that may aid reflective practice – for example the templates for skills’ analysis and training needs.

E-portfolio tools and the capacity of some packages to produce different portfolios may be an advantage in meeting various distinct objectives of portfolio production including evidence of achievement and of reflection and of progress. But there is not enough evidence yet that they assist students to improve the quality of their reflection. The support of trained tutors is important here.

Specific e-portfolio packages may have an additional advantage in the generation of webfolios (portfolios on the web) and different versions of portfolios for different audiences. However, students have to be persuaded these are necessary.

Some PDP e-portfolio packages also support placement management but only one e-portfolio package we found was specifically designed for placement management and placement portfolio building.

Potential disadvantages of e-portfolios

There may be cost, buy-in and take-up problems of e-portfolios for placement where they are not in widespread and successful use in a university before their introduction to portfolio assessment in placement.

E-portfolios may have some specific practical problems for their use in placement. These are centrally concerned with remote access to network drives and employer ‘buy-in’. There may be additional problems where the discipline requires several placements on different sites and multiple ‘sign-offs’ of competences, or where the form of creative work may be constrained by the template driven approach.

Template based e-portfolios may become too restrictive for many students as they get more skilled at writing reflectively and at constructing portfolios. It might

be difficult to achieve a ‘cake-mix’ e-portfolio that truly integrates theory and practice and demonstrates reflection and deep learning.

Students may find it unwieldy to use the e-portfolio package for placement if it is getting heavily populated with ‘assets’ as part of a progress file from school through university to the workplace. Generic e-portfolios have to be populated with assets or attributes that have to be drawn down in different combinations on different forms for different purposes and there is some evidence that students do not find this sufficiently flexible. They prefer to use common tools to construct what they want when they want it. These tools are easier to use remotely and where no local area networks are accessible. The materials produced by common tools may be easier for the author to retain ownership of, post-university.

If the institution has decided to implement a system to support PDP, then it is sensible to consider using it in placement. However students appear to value the paper product, and some employers will only look at a paper version, or at least one that can be simply emailed. Thus any system needs to produce a paper copy, and in a form that is acceptable professionally.

A checklist for placement unit e-portfolio choosers

We suggest therefore that placement units who have not recently reviewed their choices:-

1. Determine if a portfolio approach is needed to assess placement learning and document placement achievements.
2. Decide what should be the specific learning and achievement objectives for the portfolio. Refer to the QAA codes for what their good practice recommendations.
3. Ask whether these objectives can be supported with appropriate human as well as other resources.
4. Consider what needs to be done pre-placement to support learning as well as successful job search.
5. Match the portfolio content and assessment methods to these objectives and available human and other resources. Consider the advantages and disadvantages of dedicated assessors.
6. Decide what functions are necessary to deliver the portfolio learning you want to achieve – e.g. do you need a Groups function for collaborative learning; do you need discussion boards, blogs, wikis?
7. Decide who will assess the portfolio and what impact that has on choice of system or package.
8. Consider how to assess “soft” skills – honesty, reliability, leadership, team-working etc., and how these can be assessed using e-portfolio mediums.
9. Determine whether external users need access to the portfolio to view it, comment on it or assess it.

10. Determine if placement students have access to the Internet and to network drives and whether it is feasible for the students to build and manage their e-portfolio without access to these facilities.
11. Consider how to meet the needs of disabled students and tutors and overseas placements.
12. Determine how many different pieces of software you really need to support placement unit functions and how best to minimise the number and manage the potential complexity.
13. Liaise with central services over VLE or PDP/e-portfolio systems supported by the institution and what support they will offer your unit, students, tutors and employers.
14. Decide, taking into account local conditions, whether common tools, a VLE or a dedicated PDP/e-portfolio system should be the preferred method for supporting portfolio development and assessment.
15. Consider investing more resources in monitoring and evaluation of employability outcomes and impact of placement, portfolios and assessment.

Addendum: further research is required

It was evident in undertaking this study that the existing research base is very deficient.

- There is very little published about what placement units are as organisations, where they are, what they do and how and why they do it.
- There are data available about the added value of placement from first destination surveys and data on degree impact can be made available at institution level. It can be standardised for tariff points where placement is voluntary and therefore there are comparator groups of non placement students. But there is little published that analyses either type of data and that compares ‘like with like’ given the brand differences between Russell group, other pre-1992 and new universities in terms of the graduate advantages of placement.
- There is little published on the perceptions of the various actors about placement – students, tutors, employers, institutions and agencies.
- There is little published on placement or portfolios as an assessment tool, in many disciplines including business, science, ICT and engineering.
- There are a plethora of e-portfolio products and some reviews of their technical capabilities, but little on their usability in practice for various functions.

Therefore this study decided to take an exploratory but panoramic perspective to the research question, within the constraints of the time and resources available. We believe we have provided some worthwhile evidence and useful conclusions but more and more rigorous research is required in many areas. With particular reference to this study, given the limited state of knowledge on portfolios in

placement and their role in assessment we would suggest a first step requires face to face inquiry of placement units and round table discussions with various actors.

Appendix 1: Search strategy for literature on portfolios

Databases relevant to nursing and business were explored. High quality research papers with specific outcomes measured or evaluations of portfolio use were sought, as were high quality reviews relevant to the research question.

Database	Search	Limited to	Number of hits
The Cumulative Index to Nursing and Allied Health Literature (CINAHL)	MeSH keyword *portfolio*		482
CINAHL	MeSH keyword *portfolio*	Research or review articles	83
CINAHL	MeSH keywords *competency assessment and student placement*		6
CINAHL	*Electronic portfolio*.mp. [mp=title, subject heading word, abstract, instrumentation]		6
Business source premier	*Electronic portfolio*		44
Business source premier	*Electronic portfolio*	Full Text; Scholarly (Peer Reviewed) Journals	9
Business source premier	*student placement*		34
Proquest	*Electronic portfolio*		61
Proquest	*student placement*		225
Proquest	*student placement*	Scholarly papers	19

The rationale for the nursing search strategy was to use CINAHL as the database with most coverage in nursing and that to ensure quality only original research or review papers were included. As there were so few papers for *competency assessment and student placement* all were considered.

The rationale for the strategy for business studies was that Business Source Premier is the largest database of academic business journals and Proquest

indexes newspapers and trade journals which may contain more topical information. Using *portfolio* alone gave far too many hits as investment portfolios are so prominent in this literature (indeed the review by Butler (Butler, 2006) specifically excluded business as a keyword to avoid the reference to investment portfolios). *Electronic portfolio* gave a manageable number of studies but employing the strict inclusion criteria (scholarly papers) gave only a handful of studies. Thus it was relaxed to include all papers on e-portfolios or student placement.

All the references from Business Source Premier and Proquest for *electronic portfolios* and the scholarly papers for *student placement* were considered with the 83 papers from CINAHL that were academic papers on portfolios and the 6 papers on competency assessment and student placement, which gave a total of 233 papers after removal of duplicates. The titles and (where available) abstracts were examined. Relevant papers were obtained in full (where available).

Several general papers concerned with e-portfolios give background to the subject e.g. (Carliner, 2005; Dubinsky, 2003; Ellertson, 2005; Gomez, no date given) and (Cohn & Hibbetts, 2004; Gallagher, 2001; Huntington *et al.*, ; Nairn *et al.*, 2006; QAA, 2007; Stewart *et al.*, 2005). In particular the review paper by Butler (Butler, 2006) was most relevant for this study. Other informal reviews include those by (Lorenzo & Ittelson, 2005) which discusses several US systems.

After assessing titles and (where available) abstracts of papers, 49 were identified as relevant and with evidence (data or synthesis of studies) that is germane to the research question. After reading (where available) full papers this reduced to 43. Additional papers that appeared to be evidence based from other sources gave a total of 54 papers see below.

To complement the search of academic papers the “grey” literature were explored. Thus websites relevant to placement and portfolios were considered. These included:-

ASET http://www.asetonline.org/
Department for Children, Schools and Families http://www.dfes.gov.uk/
Higher Education Academy http://www.heacademy.ac.uk/
The Centre for Recording Achievement (CRA)
http://www.recordingachievement.org/
Centres for Excellence in Teaching and Learning, in particular:-

- Centre for Excellence in Work Based Learning (CEWBL) at Middlesex University http://www.middlesex.ac.uk/wbl/cfe/index.asp
- Centre for Excellence in Professional Placement Learning (CEPPL) at the University of Plymouth http://www.placementlearning.org/

JISC cetis (Centre for educational technology & interoperability standards)
http://jisc.cetis.ac.uk/domain/portfolio
PlaceNet http://www.placenet.org.uk/

Appendix 2: Table of results from relevant papers on portfolios

Authors	Domain	Sample	Results
(Ellis, 2000)	Business	Survey (n=112)	Students feel placement greatly enhances personal skills and improves employment prospects
(Goldgehn, 1989)	Business	Not stated	No details
(Nair & Ghosh, 2006)	Business	Performance in the entrance examination, group discussion, as well as personal interview, grade point average, internship marks, and ratings on extra- curricular activities	MBA students having prior work experience got placement in organisations which are perceived to be better. Also, students with work experience performed better in the personal interview as compared to freshers. Further, students with work experience were found to be comparable with freshers in respect of their performance in the entrance examination, group discussion and internship.
(Richardson & Blakeney, 1998)	Business	Case study of single student	Adequate resources, regular monitoring and realistic portrayal of placement system needed.
(Sue *et al.*, 1999)	Business	Discussion of placement at Manchester Metropolitan	Successful assessment relies on careful briefing and preparation of students prior to

Authors	Domain	Sample	Results
			placement and close liaison between placement tutor, employer and student during the sandwich period.
(Achrazoglou, 2003)	Education	Quantitative analysis of student scores (n=30) Interviews (n=17)	E-portfolios are viewed as useful by education students. Small correlation between e-portfolio mark and grade averages
(Alhammar, 2006)	Education	Not stated	e-portfolios associated with greater academic and professional growth than p-portfolios
(Bansavich, 2005)	Education	Quantitative analysis: survey (n=68)	Students' personal attributes strongest predictor of readiness to integrate technology into instruction.
(Brooks, 2007)	Education	Quantitative (n=?): Not described	After development of an e-portfolio, significant change in technology self-efficacy
(Carney, 2001)	Education	Case studies (n=6)	e-portfolios offer greater potential for continuing professional development (CPD) but students have difficulties using the technology.
(Costello, 2002)	Education	Evaluation of e-portfolio by (n=26) students	Little detail in abstract about results
(Olmstead, 1994)	Education	Survey questionnaire (n=500) of teachers	No differences seen in p-portfolios vs e-portfolios for type of subject taught, whether by distance

Authors	Domain	Sample	Results
			learning or face to face.
(Remington, 2004)	Education	Grounded theory	For e-portfolios to be effective four key components are needed: system is aligned with institutional mission, values and goals; system supported by flexible leadership; robust integrated architecture that is expandable and portable; system engages students in their learning
(Rochelle, 2004)	Education	Qualitative study of two students	Students valued e-portfolio
(Melville *et al.*, 2004)	Medicine	Correlation of marks of portfolios (n=106)	Portfolio assessment is unreliable, but used with other assessments has a place.
(O'Sullivan & Greene, 2002)	Medicine	Review	Portfolios cover the competencies needed for emergency medicine
(Swing, 2002)	Medicine	Review	Assessment methods discussed (no detail in abstract)
(Tigelaar *et al.*, 2006)	Medicine	Interview of 5 teachers	Portfolios useful, assessment too detailed and directive
(Bowers & Jinks, 2004)	Nursing	Review	There is confusion and uncertainty over meaning and implications of portfolio development, and or how to develop and present evidence in a portfolio
(Carryer *et al.*, 2002)	Nursing	Quantitative: questionnaire(n=239)	Nurses who completed a clinical

Authors	Domain	Sample	Results
			career pathway portfolio had greater knowledge and more positive attitudes
(Chabeli, 2001)	Nursing	Qualitative: not described but probably focus groups (n=20)	Portfolios, self-assessment, reflective tutorials, authentic scenarios/problem-solving tasks, simulations (role-play, educational games), peer-group assessment, reflective journal writing, critical incident analysis technique and ward round evaluation are effective methods of assessment.
(Chabeli, 2002)	Nursing	Qualitative (n=20, focus group method)	Comparison of portfolio and traditional assessment methods. No details of results given in abstract.
(Coffey, 2005)	Nursing	Quantitative survey (n=?)	Portfolios in addition to formative assessment promote a link between theory and practice in care of the elderly nursing
(Corcoran & Nicholson, 2004)	Nursing	Quantitative survey (n=22)	Identification of value of portfolios, but no details available in abstract
(Dolan *et al.*, 2004)	Nursing	Questionnaire (n=219)	Portfolios not assessed are not given high priority. Too little time is spent on portfolios
(Endacott *et al.*, 2004)	Nursing	Telephone survey and four case studies	Four models of portfolios described: shopping trolley, toast

Authors	Domain	Sample	Results
			rack, spinal column and cake mix. The latter two are more efficient in terms of meeting learning outcomes than the former two, and are more likely to have an integrated narrative
(Gallagher, 2001b)	Nursing	Questionnaire (n=73) Likert scores	Students generally positive about portfolios, but there was a smaller link between theory and practice than expected
(Jasper & Fulton, 2005)	Nursing	Case studies (2)	Masters level criteria developed
(Jasper, 1999)	Nursing	Focus groups (n=12)	Reflective writing needs to be learned and not assumed
(Joyce, 2005)	Nursing	Allegedly action research, looks more like review	Framework for assessment developed
(Lammintakanen *et al.*, 2002b)	Nursing	Survey (n=47) of clinical nurse managers	A need expressed for information on staff's skills and competencies, but current systems focused on formal education
(McCready, 2007)	Nursing	Review	Portfolios show clear links to competence to practice. Assessment should be qualitative. Tri-partite support (student, lecturer, placement mentor) necessary to develop portfolio
(McMullan *et al.*, 2003)	Nursing	Review	Reflection is essential in portfolios, explicit guidelines needed for construction of

Authors	Domain	Sample	Results
			portfolios and reliability of assessment needs addressing. Professional judgment inevitable.
(McMullan, 2006)	Nursing	Postal questionnaire (n=253)	Students felt portfolios time consuming, cause anxiety and not effective in assessing competence. Students became more demoralized with portfolios as time with experience. The main problem identified is a conflict of use of portfolios for both assessment and learning.
(Schaffer *et al.*, 2005)	Nursing	Surveys and focus groups	Portfolio assignment enhanced students' critical thinking, but concerns about structure of and assessment of portfolio decreases student satisfaction
(Scholes *et al.*, 2004)	Nursing	Interviews with 122 students and 58 nurse teachers	Over complex approaches to practice assessment detract from clinical learning. To link theory and practice there needs to be a clear fit between model of portfolio and practice to be assessed.
(Spence & El-Ansari, 2004)	Nursing	Questionnaire (n=56) to practice teachers	Concern about quality of portfolio evidence, and reliability of assessment.
(Taam-Ukkonen	Nursing	12 nurses develop a	Group work seen as

Authors	Domain	Sample	Results
et al., 2003)		portfolio	rewarding. Networked learning (WebCT) liked as it allows progression regardless of time or place
(Tiwari & Tang, 2003)	Nursing	Interviews with 12 students	Students liked portfolios, preparing these gave positive academic outcomes, spontaneous learning in support groups occurred
(Trinkl, 2005)	Nursing	Assignments of 48 students considered. Focus groups	Portfolios showed significant changes in critical thinking over time. Students liked portfolios
(Williams, 2003)	Nursing	Small scale study of one student, one supervisor and one mentor, possibly case studies	Tripartite approach needed, then portfolio valued by student, tutor and mentor.
(Tan Torres, 2004)	Occupational therapy	Focus groups, artefacts, observation	Need for peer collaboration and technical support

Appendix 3: Frequency tables of results of the survey of placement units

Table 1 Job Title of respondents

	Frequency	Percentage
Academic Placement Co-ordinator/Module leader	1	4.2
Associate Dean, Undergraduate Division	1	4.2
Curriculum Project Officer	1	4.2
Director of teaching	1	4.2
Director, Cooperative Educatio	1	4.2
Head of Industrial Training	1	4.2
Industrial training co-ordinator	1	4.2
Lecturer	3	12.5
Placement Administrator	1	4.2
Placement Co-ordinator	1	4.2
Placement manager	2	8.3
Placement manager and Module tutor	1	4.2
Placement officer	3	12.5
Placement Unit Manager	1	4.2
Placements administrator	1	4.2
Placements Tutor	2	8.3
Professional Placement Manager	1	4.2
Senior tutor for professional training	1	4.2
Total	**24**	**100.0**

Table 2 Type of Higher Education Institution

	Frequency	Percent
Post 1992 University	12	70.6
Pre-1992 University	5	29.4
Total	**17**	**100.0**

Table 3 Country

	Frequency	Percent
England	16	84.2
Wales	1	5.3
New Zealand	2	10.5
Total	**19**	**100.0**

Table 4 Is respondent willing to be phoned?

	Frequency	Percent
No	3	14.3
Yes	18	85.7
Total	**21**	**100.0**

Table 5 Is respondent willing to be interviewed?

	Frequency	Percent
No	10	45.5
Yes	12	54.5
Total	**22**	**100.0**

B1 From which of the following study areas does your University and in particular, your Placement Unit, place students?

Table 6 Areas of study from which you place students: Business

	Frequency	Percent
Not placed in this discipline	4	19.0
Unit (your own placement unit)	12	57.1
University	5	23.8
Total	**21**	**100.0**

Table 7 Areas of study from which you place students: Allied Health

	Frequency	Percent
Not placed in this discipline	12	57.1
Unit (your own placement unit)	2	9.5
University	7	33.3
Total	**21**	**100.0**

Table 8 Areas of study from which you place students: Art and Design

	Frequency	Percent
Not placed in this discipline	12	54.5
Unit (your own placement unit)	2	9.1
University	8	36.4
Total	**22**	**100.0**

Table 9 Areas of study from which you place students: Computing

	Frequency	Percent
Not placed in this discipline	2	9.1
Unit (your own placement unit)	10	45.5
University	10	45.5
Total	**22**	**100.0**

Table 10 Areas of study from which you place students: Education

	Frequency	Percent
Not placed in this discipline	10	47.6
Unit (your own placement unit)	2	9.5
University	9	42.9
Total	**21**	**100.0**

Table 11 Areas of study from which you place students: Engineering

	Frequency	Percent
Not placed in this discipline	6	28.6
Unit (your own placement unit)	4	19.0
University	11	52.4
Total	**21**	**100.0**

Table 12 Areas of study from which you place students: Midwifery

	Frequency	Percent
Not placed in this discipline	12	54.5
Unit (your own placement unit)	1	4.5
University	9	40.9
Total	**22**	**100.0**

Table 13 Areas of study from which you place students: Nursing

	Frequency	Percent
Not placed in this discipline	10	45.5
Unit (your own placement unit)	2	9.1
University	10	45.5
Total	**22**	**100.0**

Table 14 Areas of study from which you place students: Probation

	Frequency	Percent
Not placed in this discipline	18	85.7
University	3	14.3
Total	**21**	**100.0**

Table 15 Areas of study from which you place students: Social Work

	Frequency	Percent
Not placed in this discipline	10	52.6
Unit (your own placement unit)	2	10.5
University	7	36.8
Total	**19**	**100.0**

Table 16 Areas of study from which you place students: Other

	Frequency	Percent
Not placed in this discipline	6	28.6
Unit (your own placement unit)	11	52.4

University	4	19.0
Total	**21**	**100.0**

B2 For your Placement Unit, state the most common types of placement you offer.

Note:

1. *Please list the **most common programmes** from which you draw students (e.g. **your top 2 or 3 by numbers placed**).*
2. *For these programmes, please indicate the **normal duration** of placements (in number of weeks).*
3. *For these programmes please indicate also whether placements are **voluntary for all students or a compulsory part of the programme**, or a mixture (different rules for different programmes).*

*Please state also how many **distinct episodes of placement** these students undertake (e.g. most business placements are 12 months, once only, but may be voluntary or compulsory. On the other hand nursing students undertake several placements over their years' of study and these placements are compulsory).*

Table 17 Programme

	Frequency	Percent
BSc/BA/BSN Nursing	1	20.0
DipHE Nursing	1	20.0
BSc/BA Business	2	40.0
BE	1	20.0
Total	**5**	**100.0**

Table 18 Total duration of placement period

Weeks	Frequency	Percent	Cumulative Percent	Disciplines
2	1	4.5	4.5	Geography
11	1	4.5	9.1	Bachelor of Business
12	1	4.5	13.6	Computing
26	1	4.5	18.2	BE & BSc(Tech)
30	3	13.6	31.8	All business and accounting related undergraduate programme Foundation degree Business and IT Psychology
43	1	4.5	36.4	"All"
44	2	9.1	45.5	All BSc IT/All MChem IT programmes
45	1	4.5	50.0	All except IMT
46	1	4.5	54.5	Engineering/Entrepreneurship in Technology/IT & Business
48	5	22.7	81.8	All business programmes All business related programmes All programmes Art & Design BABS and BIT
52	4	18.2	95.5	All business programmes Business Studies/BA Marketing Leisure, tourism, hospitality and event management
91	1	4.5	100.0	Nursing
Total	**22**	**100.0**		

Table 19 Number of placement periods undertaken

	Frequency	Percent

1	20	87.0
2	2	8.7
12	1	4.3
Total	**23**	**100.0**

Table 20 Placement is voluntary or compulsory for students?

	Frequency	Percent
Compulsory	13	56.5
Voluntary	7	30.4
Compulsory for some, voluntary for some	3	13.0
Total	**23**	**100.0**

Table 21 2nd Programme (in addition to main programme response)

	Frequency	Percent
BSc/BA Business	1	33.3
BSc/BA IT	1	33.3
BSc (Tech)	1	33.3
Total	**3**	**100.0**

Table 22 2nd Programme: duration

Weeks	Frequency	Percent
11	1	14.3
25	1	14.3
44	1	14.3
48	2	28.6
52	2	28.6
Total	**7**	**100.0**

Table 23 2nd Programme: number of placement periods

	Frequency	Percent
1	5	71.4
2	2	28.6
Total	**7**	**100.0**

Table 24 B2 2nd Programme: voluntary or compulsory

	Frequency	Percent
Compulsory	3	50.0
Voluntary	3	50.0
Total	**6**	**100.0**

B3 About how many students in <u>total</u> (all programmes) did your particular Placement Unit place in the academic year 2005-6?
Was this around your usual numbers?

Table 25 B3 About how many students in total (all programmes) did your particular Placement Unit place in the academic year 2005-6

	Frequency	Percent	Cumm. percent
30	1	4.5	4.5
35	1	4.5	9.1
50	1	4.5	13.6
55	1	4.5	18.2
65	1	4.5	22.7
72	1	4.5	27.3
76	1	4.5	31.8
84	1	4.5	36.4
92	1	4.5	40.9
100	1	4.5	45.5
105	1	4.5	50.0
130	1	4.5	54.5
140	1	4.5	59.1
150	1	4.5	63.6
200	1	4.5	68.2
204	1	4.5	72.7
220	1	4.5	77.3
250	1	4.5	81.8
271	1	4.5	86.4
370	1	4.5	90.9

500	1	4.5	95.5
750	1	4.5	100.0
Total	**22**	**100.0**	

Table 26 B3 Was this around your usual number?

	Frequency	Percent
Decreasing	4	19.0
Same	13	61.9
Increasing	4	19.0
Total	**21**	**100.0**

Table 27 C1 For which programme(s) of study are you answering this section of the questionnaire?

Note: If all of your programmes have the same type of placement (see footnote 3)then you can put, for example, 'all Business programmes'.

Not stated	1	4.2
All	1	4.2
All BSc IT/All MChem IT programmes	1	4.2
All business and accounting related undergraduate programme	1	4.2
All business programmes	3	12.5
All business related programmes	1	4.2
All except IMT	1	4.2
All Food Bioscience programmes	1	4.2
All programmes	1	4.2
Art & Design	1	4.2
BABS and BIT	1	4.2
Bachelor of Business	1	4.2
BE & BSc(Tech)	1	4.2
BSc Degree in management and European Languages	1	4.2
Business Studies/BA Marketing	1	4.2
Computing	1	4.2
Engineering/Entrepreneurship in Technology/IT & Business	1	4.2
Foundation degree Business and IT	1	4.2
Geography	1	4.2
Leisure, tourism, hospitality amd event management	1	4.2
Nursing	1	4.2
Psychology	1	4.2
Total	**24**	**100.0**

Table 28 C2 Are your students assessed or appraised in any way during any of their work placement?

	Frequency	Percent
Yes	23	100.0

Table 29 C3 Are your students assessed or appraised by workplace assessors?

	Frequency	Percent
No	3	13.6
Yes	19	86.4
Total	**22**	**100.0**

Table 30 C3 Are your students assessed or appraised by university academics?

	Frequency	Percent
No	6	27.3
Yes	16	72.7
Total	**22**	**100.0**

Table 31 C3 Are your students assessed or appraised by others?

	Frequency	Percent
No	19	86.4
Yes	3	13.6
Total	**22**	**100.0**

Table 32 C4 Is it a requirement for your students out on work placement to complete portfolios?

	Frequency	Percent
No	4	19.0
Yes	17	81.0
Total	**21**	**100.0**

C5 What elements of the students' own work do your portfolios (or similar products) include?

Table 33 C5 Diaries/ logs recording daily experience in the workplace

	Frequency	Percent
No	4	21.1
Yes	15	78.9
Total	**19**	**100.0**

Table 34 C5 Evaluation of key tasks

	Frequency	Percent
No	8	42.1
Yes	11	57.9
Total	**19**	**100.0**

Table 35 C5 General reflection on development or deployment of skills and competences

	Frequency	Percent
No	4	21.1
Yes	15	78.9
Total	**19**	**100.0**

Table 36 C5 Personal development plan

	Frequency	Percent
No	11	57.9
Yes	8	42.1
Total	**19**	**100.0**

Table 37 C5 Theoretical analysis of the placement organisation or a particular aspect of it

	Frequency	Percent
No	7	36.8
Yes	12	63.2

Total	**19**	**100.0**

Table 38 C5 Assessment of learning outcomes relative to learning goals

	Frequency	Percent
No	8	42.1
Yes	11	57.9
Total	**19**	**100.0**

Table 39 C5 Dissertation preparation

	Frequency	Percent
No	14	73.7
Yes	5	26.3
Total	**19**	**100.0**

Table 40 C5 Examples of students' placement work (e.g. projects or activities completed)

	Frequency	Percent
No	4	21.1
Yes	15	78.9
Total	**19**	**100.0**

Table 41 C5 Examples of training outcomes (e.g. certificates of attendance)

	Frequency	Percent
No	10	52.6
Yes	9	47.4
Total	**19**	**100.0**

Table 42 C5 CV

	Frequency	Percent
No	13	68.4
Yes	6	31.6
Total	**19**	**100.0**

Table 43 C5 Personal momentos/ photos/etc.

	Frequency	Percent
No	14	73.5
Yes	5	26.3
Total	**19**	**100.0**

Table 44 C5 Other

	Frequency	Percent
No	15	78.9
Yes	4	21.1
Total	**19**	**100.0**

C6 What general support do you offer students for the preparation of their portfolio (or similar product)?

Table 45 C6 Induction session on portfolio preparation, prior to placement

	Frequency	Percent
No	4	21.1
Yes	15	78.9
Total	**19**	**100.0**

Table 46 C6 Teaching/ training in reflective practice prior to placement

	Frequency	Percent
No	12	63.3
Yes	7	36.8
Total	**19**	**100.0**

Table 47 C6 Teaching/ training in use of portfolio software prior to placement

	Frequency	Percent
No	16	84.2
Yes	3	15.8
Total	**19**	**100.0**

Table 48 C6 Access to telephone/ email advice by tutors or other Unit staff while on placement

	Frequency	Percent
No	1	5.3
Yes	18	94.7
Total	**19**	**100.0**

Table 49 C6 Visit to the workplace by University placement tutors

	Frequency	Percent
Yes	19	100.0

Table 50 C6 Opportunity to revise draft work following tutor comment on portfolio work

	Frequency	Percent
No	6	31.6
Yes	13	68.4
Total	**18**	**100.0**

Table 51 C6 Placement student feedback visit to university during placement year

	Frequency	Percent
No	7	36.8
Yes	12	63.2
Total	**19**	**100.0**

Table 52 C6 Mentoring by workplace supervisor or assessor

	Frequency	Percent

No	2	10.5
Yes	17	89.5
Total	**19**	**100.0**

Table 53 C6 Other

	Frequency	Percent
No	15	78.9
Yes	4	21.1
Total	**19**	**100.0**

C7 Do you provide for students any of the following means of electronic support for portfolio preparation?

Table 54 C7 Standard word processing packages

	Frequency	Percent
No	9	47.4
Yes	10	52.6
Total	**19**	**100.0**

Table 55 C7 BlackBoard (Bb) virtual learning environment

	Frequency	Percent
No	16	84.2
Yes	3	15.8
Total	**19**	**100.0**

Table 56 C7 WebCT virtual learning environment

	Frequency	Percent
No	16	84.2
Yes	3	15.8
Total	**19**	**100.0**

Table 57 C7 Any other virtual learning environment (please specify)

	Frequency	Percent
No	15	78.9
Yes	4	21.1
Total	**19**	**100.0**

Table 58 C7 Proprietary e-portfolio software

	Frequency	Percent

No	19	100.0

Table 59 C7 Freeware e-portfolio software

	Frequency	Percent
No	18	94.7
Yes	1	5.3
Total	**19**	**100.0**

Table 60 C7 Custom built e-portfolio software

	Frequency	Percent
No	18	94.7
Yes	1	5.3
Total	**19**	**100.0**

Table 61 C7 Specifically, do you use 'Profile'?

	Frequency	Percent
No	19	100.0

C8 Referring to Question C7, in the next two years, are you planning to implement any electronic methods of support for portfolio preparation?

Table 62 C8 Are you planning to provide any electronic support for portfolio preparation?

	Frequency	Percent
No	6	35.3
Yes	11	64.7
Total	**17**	**100.0**

Table 63: C9 Are the completed portfolios (or similar product) or any element of them, assessed in any way?

	Frequency	Percent
No	2	11.8
Yes	15	88.2
Total	**17**	**100.0**

C10 What are your views on the value of portfolio assessment?

Table 64: C10 Completing portfolio adds value to the students' placement learning experience

	Frequency	Percent

Strongly agree	14	77.8
Agree	4	22.2
Total	**18**	**100.0**

Table 65 C10 Portfolio assessment adds value to the students' placement learning experience

	Frequency	Percent
Strongly agree	14	77.8
Agree	4	22.2
Total	**18**	**100.0**

Table 66 C10 Portfolios are useful to assess placement students formatively

	Frequency	Percent
Strongly agree	7	41.2
Agree	9	52.9
Disagree	1	5.9
Total	**17**	**100.0**

Table 67 C10 Portfolios are useful to assess placement students summatively

	Frequency	Percent
Strongly agree	8	53.3
Agree	5	33.3
Disagree	2	13.3
Total	**15**	**100.0**

Table 68 C10 Portfolios are useful to assess placement students diagnostically

	Frequency	Percent
Strongly agree	4	28.6
Agree	6	42.9
Disagree	4	28.6
Total	**14**	**100.0**

Table 69 C10 e-portfolios (i.e. electronic) offer additional benefits over paper portfolios

	Frequency	Percent
Strongly agree	1	7.1
Agree	7	50.0
Disagree	5	35.7
Strongly disagree	1	7.1
Total	**14**	**100.0**

Table 70 C10 Students experience access problems using e-portfolios

	Frequency	Percent
Strongly agree	1	7.7
Agree	10	76.9
Disagree	2	15.4
Total	**13**	**100.0**

Table 71 C10 Students experience technical problems using e-portfolios

	Frequency	Percent
Strongly agree	1	8.3
Agree	9	75.0
Disagree	1	8.3
Strongly disagree	1	8.3
Total	**12**	**100.0**

C11 Are your students' portfolio 'works in progress' and/ or your students' portfolios normally submitted for assessment as paper based products or in another way?

Table 72 C11 Portfolio in progress

	Frequency	Percent
Yes paper based	5	41.7
Submitted via paper or email	5	41.7
Not submitted	2	16.7

Total	**12**	**100.0**

Table 73 C11 Completed portfolios

	Frequency	Percent
Yes paper based	9	60.0
No by email	1	6.7
No through a VLE	1	6.7
Submitted via paper or email	4	26.7
Total	**15**	**100.0**

C12 Who, (if anyone), is responsible for assessing your students' portfolio work (or similar product)?

Table 74 C12 Not assessed

	Frequency	Percent
No	18	100.0

Table 75 C12 Academic university staff

	Frequency	Percent
Yes	18	100.0

Table 76 C12 Administrative university staff

	Frequency	Percent
No	15	83.3
Yes	3	16.7
Total	**18**	**100.0**

Table 77 C12 Provider/employer/placement mentors

	Frequency	Percent
No	13	72.2
Yes	5	27.8
Total	**18**	**100.0**

Table 78 C12 Fellow students (peers)

	Frequency	Percent
No	18	100.0

Table 79 C12 Other

	Frequency	Percent
No	18	100.0

C12 Who, (if anyone), is responsible for assessing your students' portfolio work (or similar product) : **% Mark awarded**

Table 80 C12 Academic university staff

% of total mark award	Frequency	Percent
Do not award marks	13	65.0
60	1	5.0
63	1	5.0
70	1	5.0
80	1	5.0
100	3	15.0
Total	**20**	**100.0**

Table 81 C12 Administrative university staff

% of total mark award	Frequency	Percent
Do not award marks	20	100.0

Table 82 C12 Provider/employer/placement mentors

% of total mark award	Frequency	Percent
0	16	80.0
20	1	5.0
30	1	5.0
38	1	5.0
40	1	5.0
Total	**20**	**100.0**

Table 83 C12 Fellow students (peers)

% of total mark award	Frequency	Percent
Do not award marks	20	100.0

Table 84 C12 Other

% of total mark award	Frequency	Percent
Do not award marks	20	100.0

Table 85 C12 Does the portfolio gain the student credits in their degree or equivalent qualification?

	Frequency	Percent
No	12	66.7
Yes	6	33.3
Total	**18**	**100.0**

Table 86 C13 Does the portfolio gain the student credits in their degree or equivalent qualification?: How many credits out of total credits to gain the qualification?

	Frequency	Percent
Does not award credits	9	60.0
15	1	6.7
54	1	6.7
120	3	20.0
240	1	6.7
Total	**15**	**100.0**

Table 87 C14 Is any other award made? (e.g. 'stand alone' Certificate)

	Frequency	Percent
No	4	28.6
Yes	10	71.4
Total	**14**	**100.0**

Table 88 C17 Are you planning to introduce any innovative methods of portfolio assessment?

	Frequency	Percent
No	6	46.2
Yes	7	53.8
Total	**13**	**100.0**

C19 Do you complete any of the following evaluation reports?

Table 89 C19 Impact of portfolios or placement more generally, on final degree/course marks

	Frequency	Percent
No	10	66.7
Yes	5	33.3
Total	**15**	**100.0**

Table 90 C19 Impact of portfolios or placements more generally, on employability

	Frequency	Percent
No	12	80.0
Yes	3	20.0
Total	**15**	**100.0**

Table 91 C19 Impact of portfolio preparation or placements more generally, on the students' learning experience

	Frequency	Percent
No	12	80.0
Yes	3	20.0
Total	**15**	**100.0**

Table 92 C19 Specifically, impact of portfolio assessment on the students' learning experience

	Frequency	Percent
No	15	100.0

Table 93 C19 Specifically, impact of e-portfolios on the students' learning experience

	Frequency	Percent
No	15	100.0

Appendix 4: Examples of innovative methods of placement preparation and of assessment

Example of innovative preparation for placement

Interview with a placement tutor for the surveying undergraduate course in a northern university; this university unit was not a respondent to the survey.

In year 1

- There is a placement preparation block week.
- Professional practice skills include a one week assessed placement where a report is written and the employer gives a report.
- There is an academic and professional development review (APDR) and students use an e-portfolio – custom built at the university - which produces a reflection report.

In year 2

- There is a weekly (one hour) placement preparation session. Items include CV, letter writing techniques and health and safety briefings.
- There is a single one block week at the end of the year with exposure to expectations of employers, letter writing, law, accuracy and numeracy.
- There is a group interactive game. Students bid to contract with a numeric problem involved (e.g. rates, rents). If students get it right they “earn” £5000, but if they get it wrong they “lose” £10000 through a law suit
- Telephone manner is assessed, and if the student has a poor telephone manner the lecturer puts the phone down on the student and rings back till they get it right.
- Honesty is assessed by (e.g.) leaving small change around and (say) a yoyo in a site visit. Some students steal the money or play with the yoyo and they get robust feedback.

In year 3

- RICS needs two years practice and placement counts as part of this.
- Students keep a diary and log book.
- There is sign off of professional competencies by the employer.
- There is an interim report which is copied to academics.
- Students present critical appraisal and/or case studies.
- A 3,000 word report is prepared.
- Each student is given a session where the whole group reads and prepares discussion at the presentation.
- No credits are given.

- Consultancy as a group to business is assessed. This is a short (few weeks) mini-project.

An example approach to portfolio assessment

The unit is in a midlands university and places undergraduate business students

Service development

The unit undertakes an annual feedback session with all placement students, in several groups. The session includes an individually completed questionnaire, 'poster' comments and a group discussion, which is recorded. The unit uses this feedback to develop its services. The unit also interviews a sample of students who did not succeed in getting placement and surveys employers and tutors annually, for the same reason.

Responding to student preferences for more precise feedback and greater employer involvement, several years ago the unit introduced percentage marks for their portfolio, which achieves the stand alone Certificate, but is not credit bearing. There is however a final year module on reflective business practice open only to returned placement students, which is credit bearing. Its development was a result of student feedback, as is the new second year employability module.

Portfolio assessment

The portfolio is constructed over the year of placement. Marks are cumulative over the year to 100%. The weighting is as follows:

- 40% employer, for two appraisals of competence in the deployment in the workplace of key skills. An employer guidance pack explains the marking aims and procedures and the appraisal form is discussed with employers during the first tutor visit. Employers are encouraged to disucss elements of the portfolio written work (training needs and personal development plan) in mentoring sessions.
- The university is responsible for 60% of the marks of which
- 40% is given for two blocks of written work which include elements of examples of workplace achievements, records, reflection on tasks and skills, personal development planning and organisation reports. Students submit portfolio work in draft, receive written comments and follow up discussion in each of the two tutor visits, after which final work is submitted for marking.
- 10% is given for an oral presentation in the workplace to work colleagues. The content covers, learning, lessons and contribution of the student to the organisation and vice versa. The presentation is marked by the tutor having taken into account the views of those present – recorded on presentation assessment sheets.

- 10% is given for a short final placement report including an updated CV and examples of student work, in a form suitable for supporting graduate job applications and interviews.
- Tutors receive an annual tutor induction session which includes induction to assessment.

Students are happy to have employer and tutor marks added together. Portfolios are moderated in the university. It is possible for employer marks to form part of the Certificate award because it does not gain credits in the degree. Students would prefer to gain credits for their placement year but there are practical problems including the role of employers.

Appendix 4a Qualitative statements about innovative assessment of portfolio

QC16 What, (if anything), do you consider to be innovative[6] about your methods of portfolio assessment?

Subject	
R02	*We try to get to a demonstration of autonomous learning* *Based on proven strengths of Reflective Learning Log practice across many disciplines but particularly well documented in Health**.***
R04	*We have adopted an interpretivist approach to understanding and assessing student learning, recognising that standards and criteria will always be subjectively derived. We also recognise that performance standards are inherently variable, given the different contexts in which placements occur.* *All key stakeholders (students, academics and employers) are actively involved in the student's learning journey. There is on-going support and mentoring throughout the placement period. At the end of the placement, each party assesses the student's performance, competencies and future development needs, and these views become the basis for a three-way dialogue (a sort of performance review process). The students use this feedback, together with their placement experiences, to critically reflect on their learning journey. The student completes their portfolio by producing evidence of meeting the course's four learning outcomes. In effect, completion of the portfolio is a self-assessment exercise.* *In summary, an holistic and integrative approach is taken to formative and summative assessment, in order to create the conditions for sustainable assessment and lifelong learning.*
R06	*They enrich the student experience, link theory and practice and mirror appraisal practices in many organisations. They also enable the student to set and record their own development*
R09	*Use of City and Guilds as a possible outcome and may move more this way to ensure all do this.*
R12	*They are tried and tested and work well with a wide range of academics who monitor the placements. It is also a system employers contribute to.*
R15	*They are skill based rather than company based. More personal to the student*

[6] The term 'innovative assessment' we draw very broadly. It could describe aspects of unconventional exams, oral presentations, group projects or peer assessment or their method of delivery, including electronic methods.

Subject	
R17	*The journal is compulsory. It is assessed. We require the manager to sign it off.*
R20	*Utilisation of formative feedback.* *Incorporation of employer appraisals.* *Development of a final year module building on the placement experience.* *Incorporating a 'graduate' extended CV into the portfolio.* *Incorporating longer term goal setting into the portfolio to encourage students to build a career strategy.* *Encouraging the employer to engage with the student's development. They are asked to discuss the Initial Skills Review and setting of Development Goals – and also have ongoing input into the portfolio work in terms of skills review and goal setting.*
R21	*If we receive an excellent placement report, we ask that student to 'sell' the placement scheme at our open days and to our prospective placement students.*
R14	*Our portfolio has been developed over the years to reflect the importance of PDP/ reflective learning. The emphasis is on the students' input as opposed to the mentor which could be negative e.g. if personality clash occurs. It includes all of the required portfolio components mentioned plus a Health and Safety section.*

Our assessment methods are NOT innovative because…

Subject	
R02	*They are still paper-based.*
R10	*We have been doing this for 20 years or more.*

C17 Referring to Question C16, in the next two years are you planning to introduce any innovative methods of portfolio assessment?

Subject	
R02	*Keen to look at electronic portfolios.*
R04	*We intend to promote this form of assessment elsewhere in our institution.*
R06	*As I am taking over management of placement activities in September, I am not yet sure of details, though I will be considering the introduction of a range of placement types, which will inevitably bring about change in portfolio assessment.*
R09	*Blackboard, Weblogs, City and Guilds.*
R12	*via Blackboard and other university driven methods. The current system works well and is fully resourced by the faculty. The university is currently working on a new skills model for all students which could increase the skills measured from 10 – 40 and require individual feedback on all of these. This will impact on the current system, but how it is to be implemented hasn't been decided yet. And current levels of resourcing may not be maintained.*

Subject	
R14	*Electronic portfolio to run alongside traditional one.*
R15	*As we only recently switched to a skills based portfolio from a company based dissertation, we have no plans to change. We are modifying and refining the portfolio.*
R20	*Further use of Blackboard for students on placement and pre-placement.* *Investigation into the use of other placement tailored software.*
R21	*Intend to offer credit rated module.*

Appendix 5: A review of e-portfolio packages

Introduction

There are several UK official sites with information on e-portfolios. For example the Centre for Recording Achievement (CRA) has resources on http://www.recordingachievement.org/eportfolios/.

The CRA commissioned a development of a methodology of assessing e-portfolios which involved mapping of twelve e-portfolios (Richardson & Ward, 2005) including the following used in universities in the UK.

1. Newcastle University generic ePortfolio
2. RAPID Loughborough University
3. LUSID University of Liverpool, University of Huddersfield
4. Folio Glasgow Caledonian
5. PETAL Oxford Brookes
6. Electronic Portfolio System (EPS) University of Southampton

The tool developed was used to review in detail three e-portfolios:-

1. Loughborough College Progress File
2. Newcastle generic ePortfolio
3. Careers Wales/Vitaelity

One of these (ePortfolio) is used in HEIs and the review by Richardson & Ward was used in comparisons of e-portfolios below.

This review covered further and higher education and local authority usage. It was focused on evaluation of e-portfolio packages with an emphasis on technical requirements. For example, one question was 'what standards and tools are used – for example ACCLIP, LUNA, JAWS?' It does include questions generally relevant to this study concerning how portfolio authors can manage and store their materials. It includes also comments on assessment, which is more specifically relevant to this study. For example is there an assessment management tool?

However, since this study is concerned more narrowly with assessment of work based learning and portfolios it was decided to interrogate some e-portfolio packages by asking ten questions specific to placement units' requirements.

E-portfolios: some examples

In this appendix we have reviewed e-portfolios where they were found in UK universities and where we could access them to assess them. Some to which we

could not gain access but we obtained at least some information are also listed. The extent of usage in the UK is based on a recent HEA report (Strivens, 2007), where institutions meant higher education institutions (HEIs) and further education institutions (FEIs).

As stated in other

System	In use at which universities	Coverage as of 2007	Type of system
APD (Academic and Personal Development portfolio)	East Anglia		e-portfolio
ePET 'generic' ePortfolio (the results from the Richardson & Ward review allowed some answers to be completed)	Newcastle, Leeds, Sheffield, St Andrews and Dundee	Used in 8 institutions, 7 of which are medical and health schools, and being trialled in others.	e-portfolio
EPS (Electronic Portfolio System)	Southampton		e-portfolio
Mahara (has Moodle integration built in)			e-portfolio
Open Source Portfolio Initiative	Minnesota (USA)		e-portfolio
PebblePAD	Wolverhamption, Coventry, Southampton, and Bradford.	Used in 14 institutions and being trialled in a further 17.	e-portfolio
Petal	Oxford Brooks		e-portfolio
Profile	University of West of England	Used in 11 institutions and being trialled in a further 4.	e-portfolio
Taskstream			e-portfolio
Blackboard content system		Used in 45 (33 HEIs) institutions and trialled in a further 4.	e-portfolio 'extension' in content system
ASPIRE (based on Open Source *LUSID* Web-based Personal Development Planning System*)*	Oxford and Liverpool		e-portfolio for PDP

LUPDP (Lancaster University Personal Development Planning)	Lancaster		e-portfolio for PDP
PDSystem	Ulster		e-portfolio for PDP
RAPID	Loughborough	Used in 14 institutions, mostly or entirely engineering, built environment or planning	e-portfolio for PDP
PAR (Personal & Academic Records)	Newcastle and Nottingham		Personal tutor system
Challenge FRAP (used as a e-portfolio, though not designed to be one)	Massey (New Zealand)		Rich-text editor
Blackboard	De Montfort, Aston and many others		VLE
Moodle			VLE
WebCT	Central Lancashire, Leeds Metropolitan and many others		VLE

Some reviews of e-portfolios have concentrated on technical issues, for example standards and inter-operability. Other reviews consider the utility of e-portfolios for PDP. However our particular interest was in placement. Thus to inform our review and based on responses from the survey we came up with specific questions that included known problems for placement students, for example access to student work by external users:-

1. What does it cost?
2. Who maintains it?
3. Is it designed for full year placement or multiple short placements?
4. Is it compatible with university systems, including those for marks?
5. How does it deal with types of assessment - including formative and summative?
6. Is it accessible by external users e.g. employer?
7. Can it support portfolio preparation for external qualifications e.g. City & Guilds or management qualifications?
8. How does it deal with interactivity?
9. Can it be used by students after leaving university?
10. What documentation is provided for it

The answers to these questions are given at the end of this chapter. What follows next is a short description of the e-portfolios assessed arranged into three broad categories, commercial e-portfolios, custom built e-portfolios and open source e-portfolios. We also discuss the use of VLEs to support creation of e-portfolios.

Commercial e-portfolios

PebblePAD was created at the University of Wolverhampton, which continues to host it. Development and support of the system is now delivered by Pebble Learning, a spin-off company from the University of Wolverhampton, housed in the e-Innovation Centre at the university.

PebblePAD has an interface that can be altered in view to suit the wishes of the user to some extent. The default interface (pebbles) is shown in Figure 1 but various other ones exist, for example cityscape (Figure 2).

The system is specifically designed to be an e-portfolio package and dedicated to that use. The main output of the system is a webfolio or portfolio available on the web. Once created it will be given a URL that any external user can be given to access it. Students can create within PebblePAD CVs, action plans, thoughts, details of meetings, achievements and other items which would normally be put together into a webfolio. There can be any number of webfolios using different combinations of elements to address the needs of different viewers (e.g. employers, tutors). There are several built-in sub-systems to allow users to create items in a structured way, for example CVs. There are also profiles that a user may complete, for example graduate skills. Blogs are able to be created and edited, to which any PebblePAD resource may be added, including webfolios. Any resources can be shared with any user, including external users.

Figure 1: Screen from PebblePAD

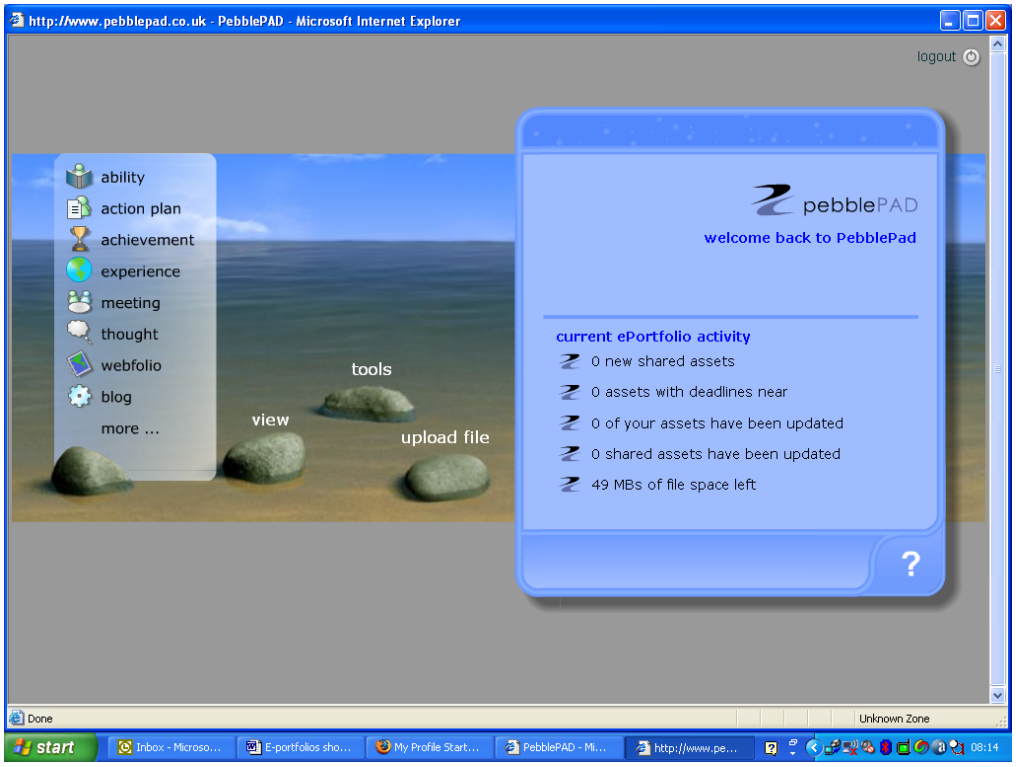
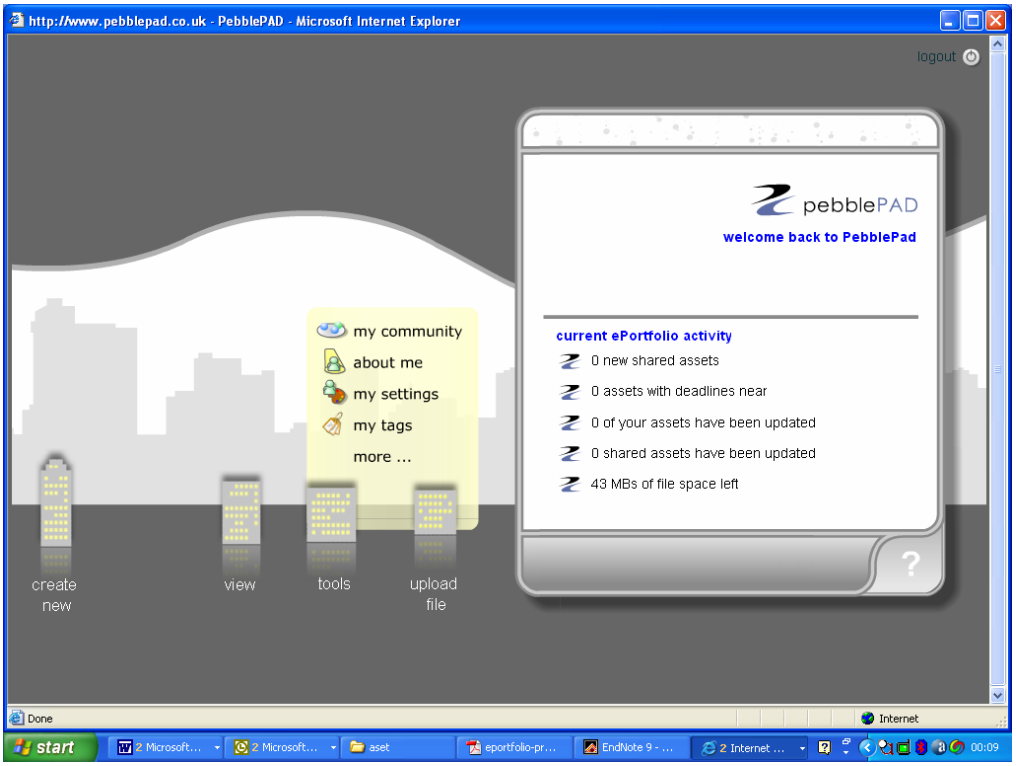


Figure 2: Alternate interface for PebblePAD



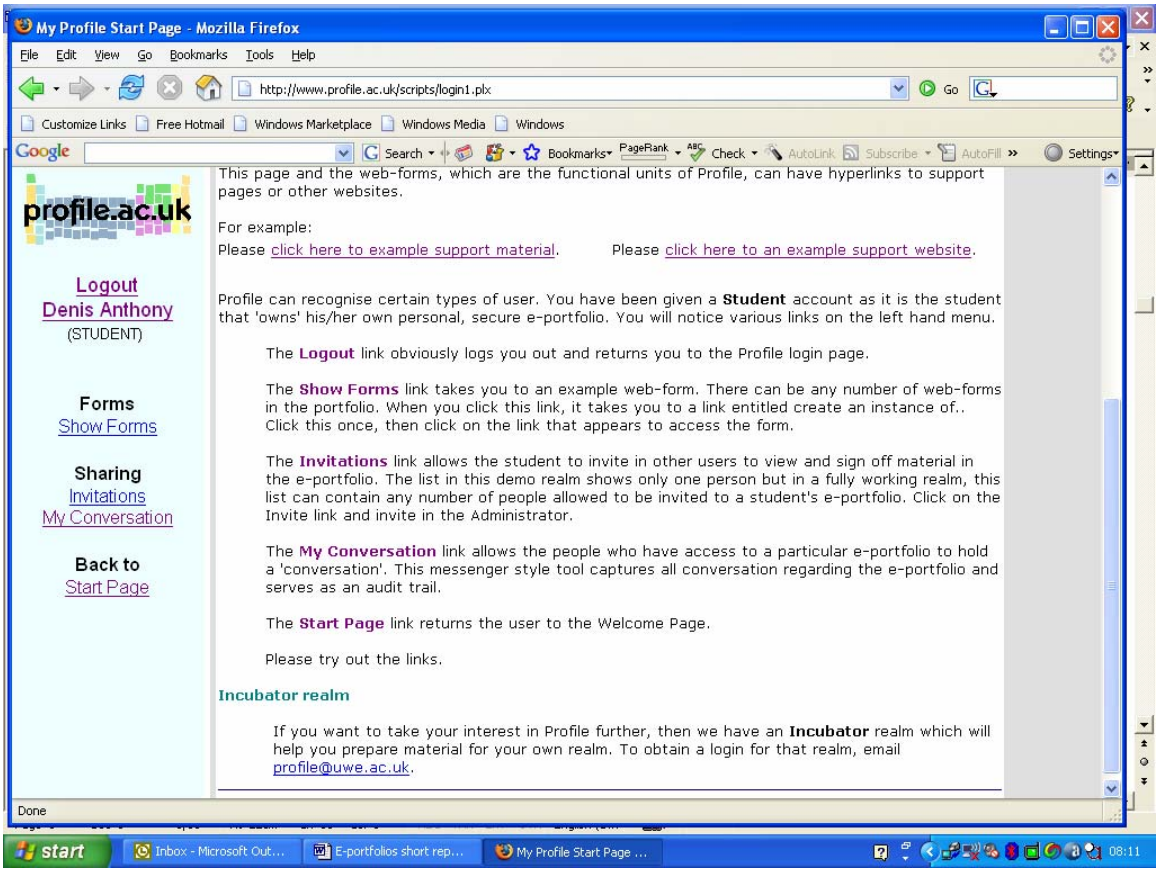
Custom built e-portfolios

Profile, which is an e-portfolio package originally designed to support placement. It covers placement management and has online forms for portfolio building. It was developed by the University of West of England. HEFCE (Higher Education Funding Council for England) funded the project. Details are on www.profile.ac.uk/profile/about/about.htm. A screen from profile is shown in Figure 3.

Profile uses online forms. In UWE's implementation there are four:-
Placement details. Student contact details, name and address of the placement, and contact details of supervisor.
Health and Safety checklist..
Learning Agreement
Individual Task Template. Completed for each task. There may be many tasks.

However Profile supports the use of any online form, and the system is therefore flexible. However one would need to create these forms. Students upload evidence to support each task. Employers (or anyone) can be invited to share work which allows them to view it. Forms once ticked off by tutor and student become locked, and the portfolio consists of as many of these forms as required by the course.

Figure 3: Example screen from Profile



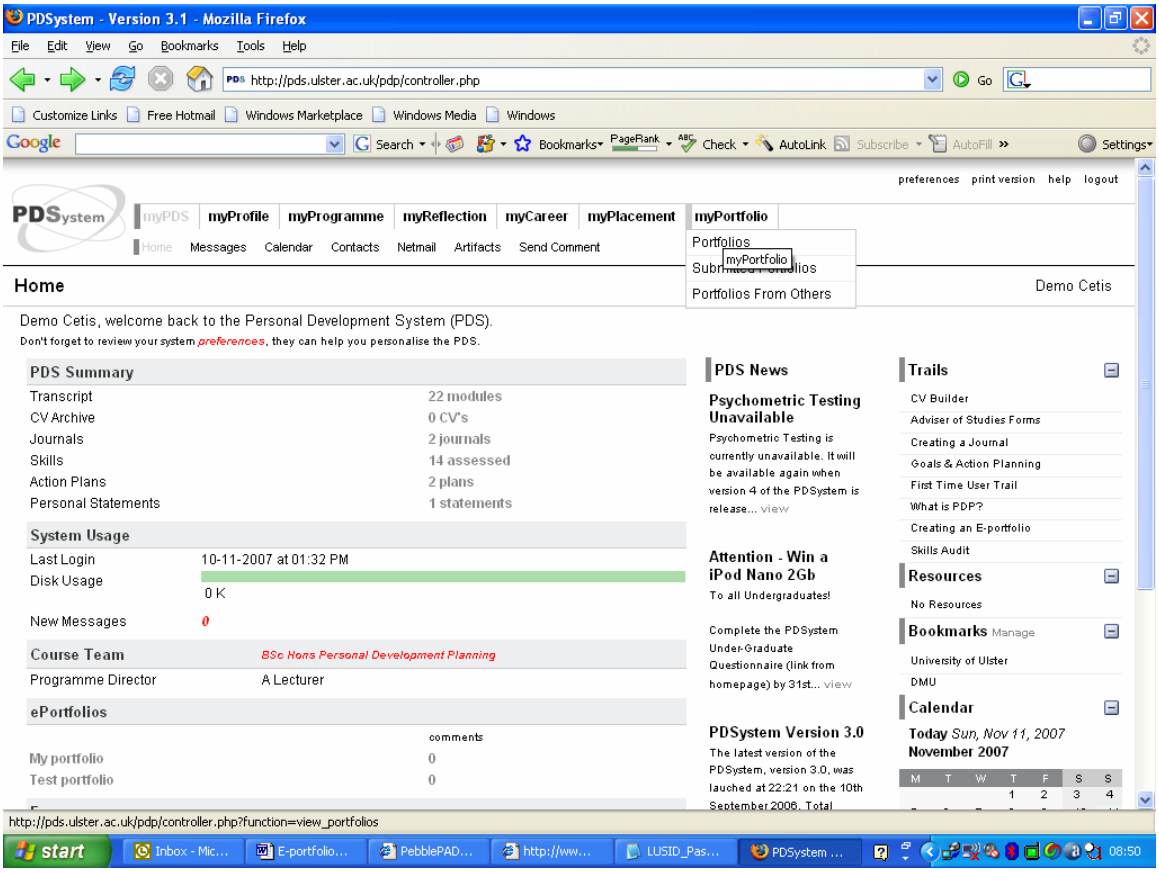
While created at UWE, and hosted there, the system is available to any UK HEIs.

Open source e-portfolios

PDSystem was developed at the University of Ulster. It includes an e-portfolio for PDP and links with other systems at Ulster, for example the placement management system. A typical screen is seen in Figure 4.

This system has many sub-systems and also allows students to measure their learning skills to undertake training needs assessment. The ethos is to provide a system that is open source and thus free for other universities so that a “club” of institutions may develop the system collaboratively. There is a placement management system that we were unable to access.

Figure 4: Example screen from PDSystem



Virtual learning environments

Blackboard, WebCT and Moodle each have optional e-portfolio modules which may be used to support e-portfolios. No survey respondent stated they were either using or intending to use any of them however, and http://wiki.cetis.ac.uk/Portfolio_systems who discuss briefly some of the e-portfolios in use in UK HE institutions, state that the Bb e-portfolio system was trialled and rejected for technical and functional reasons. However this review had not considered any of these additional modules and we offer no opinion of them. What is clear however is that many respondents are using VLEs or are intending to use them, and in chapter 6 of this report we have discussed how this could be achieved and whether this is a viable option. Our view is that it is viable for pre-placement and placement.

Summary of review of e-portfolios

1. What does it cost?

PDSystem	Free (open source)
Profile	Hosting of web-forms and e-portfolios is free of charge to any HE institution (from www.profile.ac.uk/profile/about/about.htm)
PebblePAD	It is £15 for an individual user for a year and institutional prices such as a site licence can be negotiated.
Blackboard	Institutional prices such as a site licence can be negotiated.
WebCT	Institutional prices such as a site licence can be negotiated.
Moodle	Free
Challenge FRAP	Free
ePet Newcastle generic ePortfolio	Free

2. Who maintains it?

PDSystem	University of Ulster, but as the system is Open Source, it could be added to by others
Profile	University of West of England. It is a FDTL Phase 4 (Fund for the

	Development of Teaching and Learning), HEFCE (Higher Education Funding Council for England)-funded project.
PebblePAD	Initially Wolverhampton University, now PebbleLearn
Blackboard	Blackboard Inc, http://www.blackboard.com/company/choose.aspx
WebCT	Blackboard Inc, http://www.blackboard.com/company/choose.aspx
Moodle	The Open Source Initiative but Moodle.com is based in Perth, Australia.
Challenge FRAP	Massey University New Zealand
ePet Newcastle generic ePortfolio	Development was through funding by FDTL4 and JISC - FDTL4 funded project (noncommercial). JISC funded (03-04) ePortfolio Extensions Toolkit (ePET) JISC funded (07-04) Regional ePortfolio project (EPICS) While developed by The Medical School, University of Newcastle, "on-going development planned including tools developed by third party developers, with the aim of creating a community in which developments/upgrades can be freely shared." (Richardson & Ward, 2005)

3. Is it designed for full year placement or multiple short placements?

PDSystem	It can handle either.
Profile	Not specific, but as the forms can be of any number or type there would be no problem with either type of placement.
PebblePAD	It can handle either.
Blackboard	It can handle either.
WebCT	See Bb
Moodle	See Bb
Challenge FRAP	It is not designed for either. It could be used to send files to academics or employers for their comments, and this would not be restricted to one file, so in that restricted sense it deals with multiple placements
ePet Newcastle	It was originally designed for medical students who do have

generic ePortfolio	multiple placements, so yes

4. Is it compatible with university systems, including those for marks?

PDSystem	There is an academic transcript which shows marks and credits for all modules. There is a specific assessment section in “My Placement”
Profile	There is no specific mechanism to give marks, but electronic forms could include (say) multiple choice questions (MCQs).
PebblePAD	There appears to be no marking system in the package
Blackboard	If the university uses Bb anyway there could be a specific system for transferring marks. It is easy to download marks into a spreadsheet.
WebCT	See Bb
Moodle	See Bb
Challenge FRAP	No
ePet Newcastle generic ePortfolio	It is integrated into Newcastle’s managed learning environment (MLE).

5. How does it deal with assessment?

PDSystem	When students share a portfolio tutors may read it and comment on it. When students are satisfied they can submit a portfolio by uploading it. It is locked then and the tutor can comment on it to give feedback, and if marks are awarded this will be put ultimately in the transcript.
Profile	Users can share forms and can communicate via “My Conversation” which is essentially an email system. The system makes use of electronic forms. Any form can have a student sign off and tutor sign off (tick boxes). The form can be set so that when both boxes are ticked, the form becomes locked.
PebblePAD	Work can be shared. It is possible for the student to identify what work can be viewed and who (including external users who have no access to PebblePAD) can access it. The user (external or internal) is then emailed a link and a specific login and password (if external) to access the material.

Blackboard	Bb allows MCQs and other assignments and has specific support for marks which can be automatically generated (MCQs and some other tests such as short answer tests) or entered by tutors.
WebCT	WebCT is functionally identical to Bb and the two companies have now merged. All future products will be Bb products, though current WebCT packages remain supported.
Moodle	Moodle is a freely (Open source) available package that seems to have as much functionality as Bb or WebCT and thus all the same answers apply.
Challenge FRAP	Via comments which can be made on documents in nodes. Files are saved as *.frap files. These can be emailed to employer and the tutor for assessment and feedback. They can also be uploaded to and downloaded from Internet sites. Thus formative assessment can be accommodated, but only via email and both assessor and student need Frap installed on their computer
ePet Newcastle generic ePortfolio	"Assessment is supported" (Richardson & Ward, 2005). Grades from in-course assessments, professional behaviour marks constitute a section of the portfolio.

6. Is it accessible by external users e.g. employer?

PDSystem	Yes, guest access is allowed. When a portfolio is shared with an external email address a guest usercode is automatically generated and emailed to the guest. The guest can send comments back to students.
Profile	Yes, all can be given passwords to the system. Students can "invite" users to "share" their work, which means it can be viewed.
PebblePAD	Yes
Blackboard	This is up to the university. For example at De Montfort visiting lecturers are given access, and placement supervisors could be allowed access.
WebCT	See Bb
Moodle	See Bb

Challenge FRAP	No
ePet Newcastle generic ePortfolio	"Yes – share list is within 'Portfolio Settings' tab. The learner can share specific parts of their portfolio with others (either internal or external users)." (Richardson & Ward, 2005)

7. Can it support portfolio preparation for external qualifications e.g. City & Guilds or management qualifications?

PDSystem	Not specifically but as any file can be uploaded, yes.
Profile	Not specifically. But the forms are created by the course team and could include anything, so in principle yes.
PebblePAD	Not specifically but as any file can be uploaded, yes.
Blackboard	Not specifically but as any file can be loaded onto Bb, in principle yes.
WebCT	See Bb
Moodle	See Bb
Challenge FRAP	Not specifically, but any files can be uploaded onto the system
ePet Newcastle generic ePortfolio	Not specifically but as any file can be uploaded, yes.

8. How does it deal with interactivity?

PDSystem	Portfolios can be shared with tutors (or anyone). Comments can be sent back. Email lists of cohorts are available on the system, but the addresses need to be cut and pasted into the user's email system.
Profile	Students complete their portfolio by filling in electronic forms. These are designed by the admin/academic team. The form can include a facility to upload files for evidence of achievement, essentially anything could be added by the student.
PebblePAD	Files can be shared with others. One can have a blog and share it. There is a My Community which can be populated with email addresses to communicate with other users. One can

	send to a gateway which allows groups of users to access the submission. Gateways are used for example to submit assignments.
Blackboard	There is email, discussion boards and tests (which can be automatically marked). Students can upload files. Students can be put into groups who can work collaboratively. There are survey facilities, chat rooms, virtual classroom, podcasts, blogs and wikis.
WebCT	See Bb
Moodle	See Bb
Challenge FRAP	Tutors can comment on student work via the Discussion and Feedback dialogue box. “This allows input by the student and the tutor, pertaining to particular node content. All input is sequenced and date-stamped so a clear record is kept of the feedback”
ePet Newcastle generic ePortfolio	Students can add and alter text.

9. Can it be used by students after leaving university?

PDSystem	No technical reason why not, it is up to the institution whether alumni have access.
Profile	“Because it is not linked to any one commercial VLE (virtual learning environment), use of the system is flexible and students are not wiped from the system once they graduate, thus allowing for CPD” (from www.profile.ac.uk/profile/about/about.htm)
PebblePAD	Yes, but they would need to pay
Blackboard	There is no technical reason why not, it is up to institutions to decide who has access.
WebCT	See Bb
Moodle	See Bb
Challenge FRAP	Yes
ePet	It is up to the institute who has access.

Newcastle generic ePortfolio	

10. What documentation is provided for it?

PDSystem	Documentation available online once logged in. There is a fifty page manual on using the system.
Profile	Limited, on http://www.profile.ac.uk/profile/tuts/tutorials.htm are a few "tutorials" which are just flash videos, and there is a users' guide on http://www.profile.ac.uk/profile/overview/overview.htm, and links to support on http://www.profile.ac.uk/profile/about/about.htm
PebblePAD	Not available on the system, but Coventry University (e.g.) have their own documentation.
Blackboard	http://library.blackboard.com/ref/8b752651-5c02-4644-9340-69330d559013/index.htm Bb has a specific portfolio product http://www.blackboard.com/products/Academic_Suite/portfolio.htm, which "Collect Learning Materials, Course artefacts, multimedia objects, documents and presentations can be created and creatively collected into a single unit. Institutions can develop templates to guide students to various outcomes and portfolios can be aligned with personal learning goals and action plans. Leverage Innovative Technologies for Reflection: Portfolios can include public and personal reflection spaces, such as blogs, journals and discussions".
WebCT	Yes, but merging with Bb soon
Moodle	Yes on http://docs.moodle.org/en/Main_Page
Challenge FRAP	Help facility on the package
ePet Newcastle generic ePortfolio	There is a 22 page report of the system.

Summary

There are several different models of e-portfolio development, with advantages and disadvantages for each. Individual universities have adopted each of the three types of e-portfolio systems - commercial, custom built and open source, and a larger number still from the survey are using VLEs and/or common tools. It is stressed this typology is not related to the interface, look and feel, content or quality of product. Rather they are business models of maintenance, support and development. To some extent the choice will depend on the experience and expertise of institutions. An institution with little spare capacity in the computer science human resources necessary to develop a system is clearly better advised to avoid custom build. Further one with little capacity to install and support an open source will probably want to purchase either a commercial product or use an existing VLE. However for those institutions with the necessary human capital a custom built solution may offer a tailored solution, and implementation of open source packages may allow either installation as is, or further development which can be shared with the wider academic community.

Having decided on the business model there are still many options to choose from. Whatever solution is eventually decided upon we believe it is sensible for this to be a central university decision and not one to be taken independently by placement units. Where e-portfolio solutions have been put into place centrally the packages have been sufficiently flexible to address the needs or various disciplines. Thus while the introduction of a portfolio solution probably should be centrally determined, the precise implementation of the portfolio process is best left to individual faculties, schools and programmes. Indeed it is necessary as the needs of different professional groups are so diverse.

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